



Linguistik Aktuell



Linguistics Today

Minimalist Essays

Edited by
Cedric Boeckx

John Benjamins Publishing Company

Minimalist Essays

Linguistik Aktuell/Linguistics Today

Linguistik Aktuell/Linguistics Today (LA) provides a platform for original monograph studies into synchronic and diachronic linguistics. Studies in LA confront empirical and theoretical problems as these are currently discussed in syntax, semantics, morphology, phonology, and systematic pragmatics with the aim to establish robust empirical generalizations within a universalistic perspective.

Series Editors

Werner Abraham
University of Vienna

Elly van Gelderen
Arizona State University

Advisory Editorial Board

Cedric Boeckx
Harvard University

Guglielmo Cinque
University of Venice

Günther Grewendorf
J.W. Goethe-University, Frankfurt

Liliane Haegeman
University of Lille, France

Hubert Haider
University of Salzburg

Christer Platzack
University of Lund

Ian Roberts
Cambridge University

Ken Safir
Rutgers University, New Brunswick NJ

Lisa deMena Travis
McGill University

Sten Vikner
University of Aarhus

C. Jan-Wouter Zwart
University of Groningen

Volume 91

Minimalist Essays
Edited by Cedric Boeckx

Minimalist Essays

Edited by

Cedric Boeckx

Harvard University

John Benjamins Publishing Company

Amsterdam/Philadelphia



TM The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

Library of Congress Cataloging-in-Publication Data

Minimalist Essays / edited by Cedric Boeckx.

p. cm. (Linguistik Aktuell/Linguistics Today, ISSN 0166-0829 ; v. 91)

Includes bibliographical references and indexes.

1. Minimalist theory (Linguistics) 2. Grammar, Comparative and general--Syntax. I. Boeckx, Cedric. II. Linguistik aktuell ; Bd. 91.

P158.28.M566 2006

415--dc22

2006042739

ISBN 90 272 3355 1 (Hb; alk. paper)

© 2006 – John Benjamins B.V.

No part of this book may be reproduced in any form, by print, photoprint, microfilm, or any other means, without written permission from the publisher.

John Benjamins Publishing Co. · P.O. Box 36224 · 1020 ME Amsterdam · The Netherlands
John Benjamins North America · P.O. Box 27519 · Philadelphia PA 19118-0519 · USA

Contents

Acknowledgements	VII
List of contributors	IX
Overview	
<i>Cedric Boeckx</i>	XIII
 Part I. Minimalism: A point of entry	
Some notes on the minimalist program	3
<i>Hisatsugu Kitahara</i>	
 Part II. Minimalist tools and architectural concerns	
Move F and PF / LF defectiveness	19
<i>Brian Agbayani and Masao Ochi</i>	
True optionality: When the grammar doesn't mind	
<i>Theresa Biberauer & Marc Richards</i>	
Focus and clause structuration in the minimalist program	68
<i>Aritz Irurtzun</i>	
Symmetry in syntax	97
<i>Masakazu Kuno</i>	
Japanese topic-constructions in the minimalist view of the syntax-semantics interface	115
<i>Takashi Munakata</i>	
Weak pronouns, object shift, and multiple spell-out: Evidence for phases at the PF-interface	160
<i>Marc Richards</i>	
Merge, derivational C-command, and subcategorization in a label-free Syntax	182
<i>T. Daniel Seely</i>	
 Part III. Minimalist tools and empirical pay-offs	
<i>He himself</i> and binding domains in a minimalist framework	221
<i>Gerardo Fernández-Salgueiro and Michael R. Marlo</i>	
A minimalist analysis of Japanese passives	232
<i>Takuya Goro</i>	

A minimalist view on long passive	249
<i>Hirohisa Kiguchi</i>	
Null arguments and case-driven Agree in Turkish	268
<i>Balkız Öztürk</i>	
On <i>tough</i> -movement	288
<i>Milan Rezac</i>	
Spanish existentials and other accusative constructions	326
<i>Miguel Rodríguez-Mondoñedo</i>	

Acknowledgements

I would like to thank Steven Franks and Toshikazu Ikuta, who helped me organize the *Minimalist Theorizing* conference in June 2004 at Indiana University. I would also like to thank Werner Abraham, Elly van Gelderen, and Kees Vaes for their interest and support at all stages. Thanks also to Clemens Mayr for help with the index. Last but not least, I thank my wife Youngmi for her never-failing encouragement.

Cedric Boeckx
Cambridge, Mass.
March 2006

List of contributors

Brian Agbayani
Department of Linguistics
California State University, Fresno
5245 N. Backer Ave. M/S PB92
Fresno, CA 93740-8001
USA
bagbayan@csufresno.edu

Theresa Biberauer
Department of Linguistics
University of Cambridge
Sidgwick Avenue
Cambridge CB3 9DA
UK
mtb23@cam.ac.uk

Gerardo Fernández-Salgueiro
Department of Linguistics
Undergraduate Science Building
204 Washtenaw Avenue
Ann Arbor, MI 48109-2215
USA
gfthrak@umich.edu

Takuya Goro
1401 Marie Mount Hall
Department of Linguistics
University of Maryland
College Park, MD 20742
USA
takuyag@wam.umd.edu

Aritz Irurtzun
IKER-CNRS (UMR 5478)
28, rue Lormand
64100 BAYONNE
Pays Basque
France
fvbirsva@vc.ehu.es

Hisatsugu Kitahara
Institute of Cultural & Linguistic Studies
Keio University
2-15-45 Mita, Minato-ku, Tokyo 108-8345
Japan
kitahara@icl.keio.ac.jp

Hirohisa Kiguchi
Miyagi Gakuin Women's University
Department of English
9-1-1 Sakuragaoka, Aoba, Sendai, 981-8557
Japan
kiguchih@hotmail.com

Masakazu Kuno
Department of Linguistics
Harvard University
Boylston Hall, 3rd Floor
Cambridge, MA 02138
USA
mkuno@fas.harvard.edu

Michael R. Marlo
Department of Linguistics
Undergraduate Science Building
204 Washtenaw Avenue
Ann Arbor, MI 48109-2215
USA
mmarlo@umich.edu

Takashi Munakata
Graduate School of Environment & Information Sciences
Yokohama National University
79-7, Tokiwadai, Hodogaya-ku, Yokohama-shi,
Kanagawa, 158-0093
Japan
interface_condition@leaf.ocn.ne.jp

Masao Ochi
Graduate School of Language and Culture
Osaka University
1-8 Machikaneyama Toyonaka
Osaka 560-0043
Japan
ochi@lang.osaka-u.ac.jp

Balkiz Öztürk
Western Languages and Literatures
Bogazici University
BEBEK-ISTANBUL 34342
Turkey
balkiz.ozturk@boun.edu.tr

Milan Rezac
7 rue Adran
29300 Quimperle
France
milan_rezac@yahoo.ca

Marc Richards
Department of Linguistics
University of Cambridge
Sidgwick Avenue
Cambridge CB3 9DA
UK
mdr23@cam.ac.uk

Miguel Rodriguez Mondonedo
University of Connecticut
Department of Linguistics
337 Mansfield Road
Storrs, CT 06269-1145
USA
Miguel.Rodriguez-Mondonedo@huskymail.uconn.edu

T. Daniel Seely
Dept of English Language and Literature
612D Pray-Harrold
Eastern Michigan University
Ypsilanti, MI 48197
USA
tseely@emich.edu

Overview

Cedric Boeckx

The present volume grew out of a workshop on minimalism, called *Minimalist Theorizing*, which took place on June 26–27, 2004 at Indiana University as part of the First Minimalist SyntaxFest, and which I had the pleasure to organize. Although, unfortunately, not all the papers presented at the workshop could be included in this volume on time for publication, all the essays contained herein reflect the spirit of the workshop, and of the Minimalist Program as a whole.

The Minimalist Program grew out of the Principles-and-Parameters approach to the central concerns of generative grammar: the characterization of linguistic knowledge, and the factors underlying its growth in the individual. The Principles-and-Parameters approach holds that a child's biological endowment includes a Universal Grammar which provides core principles of linguistic competence as well as well-defined points of variation ('parameters') which are assigned a fixed value as the child interacts with its environment (see Chomsky 1981, 1986). The approach emerged from two major advances in the 1970s: (i) the sharpening of general conditions on rules (see, e.g., Chomsky 1973) and (ii) the systematic uniformity discovered in comprehensive attempts to characterize languages other than English (see, especially, Kayne 1975). The perceived success of the approach led to an emphasis on issues of language design which the Minimalist Program seeks to investigate by putting into a larger context (see Chomsky 1995; 2000; 2002; Boeckx to appear; Uriagereka 1998, among many others).

As one would expect from a program, Minimalism is many things to many researchers, and there are by now many alternative versions of it. Central to all is the fundamental question: to what extent is the human language faculty an optimal solution to minimal design specifications? The question becomes empirical to the extent that we are able to formulate interface conditions and clarify notions of good design. Good design specifications are common to all rational inquiries, and typically revolve around the same concepts: symmetry, elegance, parsimony, etc. Interface conditions are more specific to the linguistic enterprise, and will therefore be of central concern in this volume.

All the essays contained in this volume are animated by the substantive issues raised by the Minimalist Program. This is reflected in some concrete principles proposed by the authors to analyze specific empirical phenomena in a new light. As already pointed out by Epstein and Hornstein (1999: ix), such a methodological strategy is justified in so far as the proof of a program ultimately rests on how interesting the detailed products that result from taking its guidelines seriously look.

I have decided to keep this introduction very short, and let the various contribu-

tions speak for themselves. I have, however, provided a specific organization to the volume, which I would like to discuss here.

The volume is divided into three parts. A first part, entitled 'Minimalism: A Point of Entry,' consists of Kitahara's essay "Some notes on the Minimalist Program." Kitahara outlines the main features of Minimalism, its historical and conceptual sources, and provides an illustration of minimalist theorizing by looking at several properties of the syntactic component of grammar including agreement, and the transformational cycle. Accordingly, Kitahara's paper can be read as an introduction to the volume as a whole. It is indeed the very nature of a program like Minimalism that no rigid theoretical codification can be offered for it: Minimalism is more of a 'way of doing syntax', of asking specific questions about language, and Kitahara offers an excellent example of what 'Doing Minimalism' amounts to.

The second part of this volume is called 'Minimalist Tools and Architectural Concerns.' It contains essays by Brian Agbayani and Masao Ochi, Theresa Biberauer and Marc Richards, Aritz Irurtzun, Masakazu Kuno, Takashi Munakata, Marc Richards, and T. Daniel Seely. As the title of Part Two indicates, all these authors concentrate on what kind of computational tools are made available in a minimalist syntactic component, and how the computational system interacts with external and interface domains of the mind/brain. Agbayani and Ochi argue that Chomsky's 1995 feature-movement operation, discarded in Chomsky's subsequent writings in favor of the long-distance checking operation Agree, is in fact needed. Biberauer and Richards propose a way of handling true optionality in a minimalist syntax. Irurtzun looks at focus assignment in Basque and how a minimalist syntax offers a direct mapping to the interpretive (semantic) system. Kuno argues that minimalist syntax ought to be seen as a representational system, as such a system allows for a more natural way of capturing restrictions on a variety of reconstruction effects. Munakata uses Japanese topic constructions to provide additional argument for the strong minimalist thesis. Richards examines the nature of phases, which provide cyclic access to the interfaces. Finally, Seely focuses on whether labels and projections are needed in a rigorously minimalist syntax.

Part Three of the volume entitled 'Minimalist Tools and Empirical Pay-offs' more specifically focuses on direct empirical gains that emerge from adopting minimalist tools. The essays contained in this portion of the book can be seen as excellent case studies of what Minimalism has to offer on the empirical side. Part Three contains essays from Gerardo Fernández-Salgueiro and Michael Marlo, Takuya Goro, Hirohisa Kiguchi, Balkiz Öztürk, Miguel Rodríguez-Mondoñedo, and Milan Rezac.

Fernández-Salgueiro and Marlo analyze emphatic reflexives, Goro derives the various types of passives from a minimalist syntax, Kiguchi investigates the phenomenon of long-distance passivization in Japanese, Öztürk looks at *pro*-drop in Turkish, Rodríguez-Mondoñedo examines properties of agreement in existential sentences in Spanish and beyond, and Rezac offers an analysis of *tough*-constructions.

I want to conclude this brief overview by pointing out that as the very program-

matic nature of Minimalism leads us to expect, at this point in time it is quite unclear which minimalist tools are really part of the language faculty. Accordingly, one should not expect the proposals made in the essays contained in this volume to always agree with one another. While convergence is always desirable, I think that at this stage of research it is best to explore all the options that are available and see where they lead.

References

- Boeckx, C. To appear. *Linguistic Minimalism: Origins, methods, concepts and aims*. Oxford: OUP.
- Chomsky, N. 1973. Conditions on transformations. In *A Festschrift for Morris Halle*, S. Anderson and P. Kiparsky (eds), 232–286. New York: Holt, Rinehart, and Winston.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. 1986. *Knowledge of Language*. New York: Praeger.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. *New Horizons in the Study of Language and Mind*. Cambridge: CUP.
- Chomsky, N. 2002. *On Language and Nature*. Cambridge: CUP.
- Epstein, S. D. and N. Hornstein (eds). 1999. *Working Minimalism*. Cambridge MA: The MIT Press.
- Kayne, R. S. 1975. *French Syntax*. Cambridge MA: The MIT Press.
- Uriagereka, J. 1998. *Rhyme and reason*. Cambridge MA: The MIT Press.

PART I

Minimalism: A point of entry

Some notes on the minimalist program

Hisatsugu Kitahara

Abstract

The pursuit of the Galilean intuition in linguistics (asking not only what the properties of language are, but why they are that way) laid the groundwork for the formulation of the strongest minimalist thesis (language is an optimal solution to legibility conditions); and this thesis, whether tenable or not, set a new standard for genuine explanation. That is, under a minimalist perspective, any departure from what would constitute a perfect system is taken to be a problem, and a specific goal of the Minimalist Program is to find a new answer (ideally) with no departure at all. The paper seeks to obtain a better understanding of this research program by reviewing some of its specific proposals.

1. Introduction

Chomsky (2000) notes that it is a misunderstanding to contrast “minimalism and X” (where X is some theoretical conception), since X may or may not be pursued with minimalist goals. But, to pursue X with minimalist goals, one must have some understanding of the minimalist thesis and the minimalist pursuit. The main goal of this paper is to clarify these two prerequisites. I first articulate the minimalist thesis by reviewing some of the leading ideas of generative grammar. I then highlight some of the characteristics of the minimalist pursuit by reviewing some specific proposals, in particular, those implemented for movement.

2. Minimalist thesis

In this section, reviewing some historical developments of generative grammar, I discuss the current formulation of the minimalist thesis (see also Kitahara 2002a, 2003).

2.1 The logical problem of language acquisition

In *The Logical Structure of Linguistic Theory (LSLT)*, Chomsky set forth a research program of generative grammar, aiming to develop a theory which accounts for the following aspect of linguistic behavior:

A speaker of a language has observed a certain limited set of utterances in his language. On the basis of this finite linguistic experience he can produce an indefinite number of new utterances which are immediately acceptable to other members of his speech community. He can also distinguish a certain set of “grammatical” utterances, among other utterances that he has never heard and might never produce. He thus projects his past linguistic experience to include certain new strings while excluding others.

(Chomsky 1955/1975: 61)

Given this fact, a question arises: how could he develop such remarkable linguistic knowledge on the basis of highly limited linguistic experience? This question was restored to the center stage of modern linguistics by *LSLT*, and it is the fundamental empirical problem that generative grammar seeks to explain.

2.2 Early generative grammar

To deal with this problem, early generative grammar adopted the following guideline:

For the construction of a reasonable acquisition model, it is necessary to reduce the class of attainable [note 22, omitted, H.K.] grammars compatible with given primary linguistic data to the point where selection among them can be made by a formal evaluation measure.

(Chomsky 1965: 35)

Under this guideline, two distinct research programs were initiated: one was the search for restrictive theories of UG (seeking to discover those properties of given languages which can be reduced to universal properties), and the other was the search for evaluation procedures (seeking to develop a formal evaluation metric for selecting a grammar of the appropriate form among those compatible with given primary linguistic data).

2.3 The principles-and-parameters model

Around 1980, the efforts and results of early generative grammar crystallized in what has come to be called the principles-and-parameters (P&P) model. Under this model, the logical possibility of linguistic theory with no formal evaluation measure became real, bringing in a major conceptual shift in the history of generative grammar. In

Lectures on Government and Binding (LGB), Chomsky noted:

What we expect to find ... is a highly structured theory of UG based on a number of fundamental principles that sharply restrict the class of attainable grammars and narrowly constrain their form, but with parameters that have to be fixed by experience. If these parameters are embedded in a theory of UG that is sufficiently rich in structure, then the languages that are determined by fixing their values one way or another will appear to be quite diverse ...

(Chomsky 1981:3–4)

As the P&P model took shape, the search for restrictive theories of UG moved to the focus of attention under new perspective. In *LGB*, Chomsky understood the search for restrictive theories of UG to be based on the following intuition about the structure of UG itself:

[T]he theory of core grammar, at least, is based on fundamental principles that are natural and simple, and ... our task is to discover them, clearing away the debris that faces us when we explore the varied phenomena of language and reducing the apparent complexity to a system that goes well beyond empirical generalization and that satisfies intellectual or even esthetic standards.

(Chomsky 1981: 14)

This is essentially an intuition underlying the Galilean ideal of perfection of nature, and it has been a driving force of the Minimalist Program. Under this intuition, generative grammar was engaged in the search for simpler and more natural theories of UG.

Importantly, it was then pointed out that this search bears a rather unprecedented status. In *LGB*, Chomsky noted:

[I]t is worth bearing in mind that this class of rather vague methodological guidelines has a rather different status, and much less obvious validity, than the search for more restrictive theories of UG, which is dictated by the very nature of the problem faced in the study of UG. It is quite possible to distinguish between these concerns. For example, a theory of UG with redundancies and inelegant stipulations may be no less restrictive than one that overcomes these conceptual defects.

(Chomsky 1981: 15)

The search for simpler and more natural theories of UG goes beyond the goal of explanatory adequacy (see Chomsky 2001b for related discussion). That is, to the extent that the search is successful, it (surprisingly) validates the intuition that a system of language meets the condition of explanatory adequacy in a way satisfying “intellectual or even esthetic standards.” Note that, under the P&P model, the logical problem of language acquisition no longer gives any argument to expect UG to be simple and natural.

In short, it was the crystallization of the P&P model that made possible to launch the search for simpler and more natural theories of UG. In retrospect, the articulation

of the intuition behind this search (namely, the Galilean intuition in the domain of linguistic inquiry) was essentially the opening act of minimalist theorizing.

2.4 Full interpretation and last resort

The search for simpler and more natural theories of UG scrutinized the descriptive devices of UG, and the steps in this direction shed new light on the interface properties between the faculty of language (FL) and the performance systems. In *Knowledge of Language (KOL)*, Chomsky assumed such interface properties to be critical factors in determining the internal structure of FL, and he formulated a principle of Full Interpretation (FI):

[E]very element of PF and LF, taken to be the interface of syntax (in the broad sense) with systems of language use, must receive an appropriate interpretation ...

(Chomsky 1986: 98)

The descriptive devices of UG were then assumed to be redundant if they were based on the empirical facts explicable under FI.

Interestingly, the concept of FI was also relevant when we scrutinized the operations of UG, in particular, the application of movement. In *KOL*, Chomsky formulated a principle of Last Resort (LR):

An NP is moved only when this is required, either because it is *wh*-phrase that must appear in an operator position (at least an LF), or in order to escape a violation of some principle: the Case filter, as in the case of passive and raising, or a principle to which we return requiring nongovernment of the empty category PRO.

(Chomsky 1986: 143)

In effect, LR says that α is moved only if this application of movement is required for α to be an element satisfying FI (holding of PF and LF).

In the subsequent work, Chomsky (1991) elevated FI and LR to the economy conditions of UG, which formed the basis for our understanding of the notion of optimality in linguistic theory.

2.5 The strongest minimalist thesis

Under the P&P approach, it was repeatedly demonstrated that languages are much simpler in inner structure than the data seemed to show. From this reasonable (though not necessary) conclusion, Chomsky (1993) started his seminal paper “A Minimalist Program for Linguistic Theory.” In this work, the interface conditions and the economy conditions were assigned much greater prominence, and what comes to be called the

strongest minimalist thesis was formulated for the first time:

The linguistic expressions are the optimal realizations of the interface conditions, where “optimality” is determined by the economy conditions of UG.
(Chomsky 1993, 1995: 171)

Recall that the interface conditions are determined by FI (holding of PF and LF), and the notion of optimality is constituted in part by LR. With these conditions (and others with intuitive character), generative grammar was engaged in the search for an optimal design of language.

2.6 The minimalist program for linguistic theory

The shift of perspective provided by the P&P model generated very productive research inquiries. Incorporating the guiding ideas of such inquiries, Chomsky (1995) defined the characteristics of the Minimalist Program as follows:

This work is motivated by two related questions: (1) what are the general conditions that the human language faculty should be expected to satisfy? and (2) to what extent is the language faculty determined by these conditions, without special structure that lies beyond them? The first question in turn has two aspects: what conditions are imposed on the language faculty by virtue of (A) its place within the array of cognitive systems of the mind/brain, and (B) general considerations of conceptual naturalness that have some independent plausibility, namely, simplicity, economy, symmetry, nonredundancy, and the like?

Question (B) is not precise, but not without content; attention to these matters can provide guidelines here, as in rational inquiry generally. Insofar as such considerations can be clarified and rendered plausible, we can ask whether a particular system satisfies them in one or another form. Question (A), in contrast, has an exact answer, though only parts of it can be surmised in the light of current understanding about language and related cognitive systems.

To the extent that the answer to question (2) is positive, language is something like a “perfect system,” meeting external constraints as well as can be done, in one of the reasonable ways. The Minimalist Program for linguistic theory seeks to explore these possibilities.

(Chomsky 1995: 1)

The defining characteristics of the Minimalist Program crucially rest on the two factual assumptions: FL is used by the performance systems; and, to be usable, FL must satisfy certain minimal requirements imposed by the performance systems. Given these assumptions, we can ask questions about such requirements and the internal structure of FL itself, such as: (i) what are the minimal requirements imposed by the performance systems? and (ii) how well is FL designed to satisfy them?

The answer to question (i) (essentially, question (A)) should be given by clarifying

the conditions of FI (holding of PF and LF). To the extent that the conditions of FI are clarified, question (ii) can be addressed. Now, to the extent that the answer to question (ii) is positive, FL is something like a “perfect system,” equipped with devices just enough to satisfy those minimal requirements (imposed by the performance systems) and do so in an optimal way (determined by LR and other considerations related to question (B)). This is the substantive thesis of the Minimalist Program, and the minimalist inquiries proceed with some specific proposals, hoping to determine the validity of this thesis.

3. Minimalist pursuit

To pursue the minimalist thesis, the following assumption has been adopted:

FL provides no machinery beyond what is needed to satisfy minimal requirements of legibility and that it functions in as simple a way as possible.

(Chomsky 2000: 112–113)

It is important to note that it does not say there is “no machinery”; it says there is “no machinery beyond what is needed...” meaning that there is machinery (i.e., mechanisms that generate objects). In this section, reviewing in detail some specific mechanisms implemented for movement, I highlight some of the characteristics of the minimalist pursuit.

3.1 A probe-goal system

In the early stage of minimalist theorizing, there was a very important breakthrough. Given a minimalist perspective, the existence of uninterpretable features was recognized as a serious problem for the first time, and why they exist in language became one of the core minimalist questions. To answer this question, the Minimalist Program has been pursuing the intuition that uninterpretable features are implemented for movement, where movement is (by hypothesis) required to satisfy externally imposed legibility conditions. If this intuition turns out to be (more or less) correct, then we have the following answer: they are there as part of an optimal way of implementing movement. Chomsky (2000) proposes a probe-goal system as a device incorporating uninterpretable features as such. Let us then review the central mechanisms of the probe-goal system.

Suppose that C_{HL} has constructed the structure (1):

- (1) T-be elected [_a an unpopular candidate]

This structure involves three kinds of uninterpretable features: (i) the ϕ -features of T that identify T as a target of movement, (ii) the EPP-feature of T that requires that something be merged with the projection headed by T, and (iii) the Case-feature of

candidate that identifies α as a candidate for such merger (hence movement). The ϕ -set of T is taken to be a probe that seeks a goal, namely, matching features that establish agreement: the ϕ -set of *candidate*. Locating this goal, the probe erases under matching. Taking structural Case to be a reflex of an uninterpretable ϕ -set, the Case-feature of the goal too erases under matching with the probe. The erasure of uninterpretable features of probe and goal is the operation called Agree. As for EPP of T, it seeks an XP to merge with the projection headed by T, and this requirement is satisfied by pied-piping of α (determined by the goal of T's probe). Under this system, movement is "carried out" in the process of deleting these (otherwise, useless) uninterpretable features; and the Minimalist Program argues that the probe-goal system is the optimal device inducing movement.

The Minimalist Program further elaborates the relation between probe P and goal G. Since not every matching pair of P and G induces the operations Agree and Move, it is assumed that there must be some other pre-requisites.

First, it is assumed that both P and G must be active to yield agreement, meaning that each bears some uninterpretable features. Given this assumption, it follows that (in the case of passive and raising) G gets "frozen in place" when structural Case of G gets deleted, since caseless G is no longer active (bearing no uninterpretable feature). The empirical content of LR thus follows.

Second, it is assumed that G must be the first matching category of P to yield agreement. Consider the structure (2) (where $>$ is c-command, β and γ match the probe α , but β is inactive):

$$(2) \quad \alpha > \beta > \gamma$$

In (2), α cannot agree with γ because α matches with inactive β which is closer to α than matching γ is, which means that G must be the first matching category of P, in order to yield agreement. The empirical content of the minimal link condition (MLC) thus follows.

To be concrete, let us consider the structure (3) (a case of superraising):

$$(3) \quad [_\alpha T] \text{-seem that } [_\beta \textit{it}] \text{ was told } [_\gamma \textit{friends}] \text{ CP}$$

In (3), α (matrix T) cannot agree with β (*it*) or γ (*friends*). The former agreement is blocked because β is inactive, and the latter agreement is blocked because inactive β is closer to α than matching γ is. Note that the first matching β , in effect, restricts the search domain of α , thereby contributing to the reduction of operative complexity.

3.2 Phase-impenetrability condition and cyclic transfer

In the Minimalist Program, it has been assumed that uninterpretable features must be removed from the narrow syntax (to satisfy FI at LF) but left available for the PF component (to yield language-variant PF-manifestation). Now notice, this assumption poses a problem for the probe-goal system if Spell-Out applies at a single point of

a derivation. Chomsky states the problem as follows:

pre-Spell-Out, the probe must delete when checked yet remain until Spell-Out
[note 99 omitted, H.K.]

(Chomsky 2000: 131)

To resolve this problem, Chomsky (2001a) advances the following proposal, which dispenses with the notion uninterpretable features:

the uninterpretable features, and only these, enter the derivation without values,
and are distinguished from interpretable features by virtue of this property

(Chomsky 2001a: 5)

Note that the notions “interpretable and uninterpretable” were problematic since it was not clear how C_{HL} detects the uninterpretable status of features (in particular, ϕ -features) in the course of a derivation. Under this proposal, they are replaced by the notions “valued and unvalued,” and C_{HL} distinguishes the ϕ -set of probe P from the ϕ -set of goal G by lack of specification of value. This system, unlike the previous one, makes the following prediction: if C_{HL} establishes agreement between P and G (assigning values to the ϕ -set of P), then the crucial distinction is lost. That is, after valuation, the ϕ -set of P and the ϕ -set of G are indistinguishable.

Having noted that assignment of feature-value entails loss of feature-distinction, Chomsky (2001a: 5) proposes cyclic Spell-Out. Specifically, he suggests that Spell-Out applies “shortly after” the uninterpretable features have been assigned values, where the notion “shortly after” is determined (in part) by the Phase-Impenetrability Condition (PIC). Consider the following definition of PIC (where the edge is understood as the residue of H-bar, either specifiers or elements adjoined to α):

In phase α with head H, the domain of H is not accessible to operations outside α ,
only H and its edge are accessible to such operations.

(Chomsky 2000: 108)

Under current assumptions, PIC restricts the work space of C_{HL} . PIC ensures that, once α completes, the elements inside the complement domain of H become “inert,” undergoing no further syntactic operation. Such a “syntactically inert” domain (in turn) becomes a target of cyclic Spell-Out, more accurately, cyclic Transfer in the sense of Chomsky (2001b) (see also Epstein et al. (1998), Epstein (1999), Uriagereka (1999)):

- (4) Transfer hands [a narrow syntax derivation] D_{NS} over to the PF component and to the LF component.

Suppose that transferred materials can be “forgotten” in subsequent stages of a derivation. Then, under a minimalist perspective (seeking to reduce the “memory load” of C_{HL}), Transfer applies to a “syntactically inert” domain as soon as it is determined. Given PIC formulated above, Transfer applies to the complement domain of H at the completion of α .

3.3 Phonological content and intervention effect

Adopting PIC and cyclic Transfer, Chomsky (2001a:26) points out that there is no other way to derive the structure (5):

- (5) (guess) $\text{what}_{\text{Obj}} [\text{John}_{\text{Subj}} \text{ T } [_{\text{vP}} t_{\text{Obj}} [t_{\text{Subj}} \text{ read } t_{\text{Obj}}]]]$

PIC requires that what_{Obj} move to Spec- ν for subsequent *wh*-movement; consequently, the ϕ -set of T (seeking to match the ϕ -set of $\text{John}_{\text{Subj}}$) probes into νP , crossing over what_{Obj} (occupying Spec- ν). This probing of T to $\text{John}_{\text{Subj}}$ faces a problem if the first matching ϕ -set of what_{Obj} (occupying Spec- ν) cancels the further search of T.

To resolve this problem, Chomsky (2001a) suggests that the ϕ -set of T can “bypass” the first matching what_{Obj} (occupying Spec- ν). He implements this “bypass” analysis as follows. He first assumes that the subsequent movement of what_{Obj} from Spec- ν to Spec-C, in effect, licenses the probe-goal relation between T and $\text{John}_{\text{Subj}}$. With this assumption, he proposes the following condition (for the structure (2)):

- (6) The first matching β prevents Match of α and γ only if β has phonological content.

Chomsky further assumes that the probe-goal relation is evaluated for the condition (6) at the next strong phase level. Under these assumptions, $\text{John}_{\text{Subj}}$ is allowed to move to Spec-T over what_{Obj} (occupying Spec- ν), and the probe-goal relation between T and $\text{John}_{\text{Subj}}$ is evaluated for the condition (6) after it is known whether the intervening position of what_{Obj} , namely Spec- ν , has become a trace (losing its phonological content). In the derivation of (5), the intervening position of what_{Obj} has no phonological content at the relevant phase level, namely, CP; hence, the first matching what_{Obj} does not interfere with Agree of T and $\text{John}_{\text{Subj}}$.

3.4 Subjecting cyclic transfer to a minimalist critique

Epstein and Seely (2002) argue that the current implementation of cyclic Transfer has a serious problem. Referring to Chomsky’s (2001a:5) statement (7),

- (7) after application of Agree, the distinction is lost

Epstein and Seely point out that, if the distinction between interpretable and uninterpretable features is lost after valuation, then the distinction is necessarily lost “shortly after” valuation as well.

Chomsky (2001a, b) assumes that C_{HL} can detect those “newly valued” features up to the next strong phase level. How C_{HL} carries out this task is not clear; but, presumably, C_{HL} requires some kind of memory buffer to “remember” the initial status of unvalued features up to the next strong phase level. The size of such memory buffer, however, matters for minimalist design because the reduction of memory load simplifies computation; and what Epstein and Seely suggest is that, under a minimalist perspective, the ideal size of memory buffer should be minimum.

3.5 Strongly cyclic transfer

Departing from cyclic Transfer, Epstein and Seely (2002) explore the possibility (8), which we might call strongly cyclic Transfer (SCT) (see also Epstein et al. (1998), Epstein (1999)):

- (8) Each syntactic operation transfers the relevant aspects of its output to the phonological component and to the semantic component.

Note that SCT occurs in every transformational mapping, removing uninterpretable features in the process of valuation. This approach raises a number of questions (see Epstein and Seely 2002, 2006). In this paper, I limit myself to the question of whether the “bypass” analysis is reformulable in strongly derivational terms.

Recall the condition (6). Under SCT, the probe-goal relation is evaluated for the condition (6) at every derivational point; hence, C_{HL} must know whether or not goal has phonological content when the search of probe takes place. To be concrete, let us examine the relevant aspects of the structure (5), given in (9):

- (9) $T [_{VP} \text{what}_{Obj} [John_{Subj} \nu [_{VP} V t_{Obj}]]]$

In (9), the ϕ -set of T (seeking to match the ϕ -set of $John_{Subj}$) probes into νP , crossing what_{Obj} (occupying Spec- ν). Under the condition (6), this probing of T to $John_{Subj}$ requires that what_{Obj} bear no phonological content; and under SCT, this requirement must be met when the probing of T to $John_{Subj}$ takes place. But how can C_{HL} determine the “ultimate fate” of the phonological content of what_{Obj} at this derivational point?

To answer this question, I first appeal to the notion occurrence of lexical item (presented in Chomsky 1995):

- (10) An occurrence of lexical item α is a sister of α , and the two occurrences (H, L) of α are formed if α is merged first with L and later with H.

Suppose that α has phonological content PC. Then, as C_{HL} forms two occurrences (H, L) of α , we expect PC of α to be associated with (H, L). But the fact is that PC of α receives interpretation only at higher occurrence H, which means that PC of α is dissociated from lower occurrence L. Such feature-dissociation is then assumed to take place (automatically) as C_{HL} merges α with H. Here, I would like to advance this feature-dissociation analysis with the following proposal (see also Kitahara 2001, 2002b, 2003, Kawashima and Kitahara 2003):

- (11) Feature-dissociation may take place at any point of a derivation.

With this proposal, let us return to the structure (9).

Recall that, to allow the probing of T to $John_{Subj}$ (in accord with the condition (6)), PC of what_{Obj} must be dissociated from its intervening occurrence at this point of the derivation. Now notice, under current assumptions, such feature-dissociation may take place during the search of T . Given this possibility, the intervening occurrence of what_{Obj} does not block the probing of T to $John_{Subj}$. But notice, this feature-dissocia-

tion analysis makes the following two predictions:

- (12) If C_{HL} establishes no new occurrence of $what_{Obj}$ after this application of feature-dissociation, then there won't be any place for PC of $what_{Obj}$ to receive interpretation.
- (13) If C_{HL} forms a new occurrence of $what_{Obj}$ after this application of feature-dissociation, then PC of $what_{Obj}$ can receive interpretation at this "newly formed" occurrence of $what_{Obj}$.

Thus, it follows that $what_{Obj}$ bearing PC must undergo further movement (as observed in the derivation of (5)); otherwise, PC of $what_{Obj}$ would receive no interpretation (violating FI at PF). Note that the current approach achieves this result with the minimum size of memory buffer, namely, the single transformational mapping.

4. Summary

The Minimalist Program (MP) adopts the empirical assumption that movement is (by hypothesis) required to satisfy externally imposed legibility conditions (holding at LF). Given this assumption, a question arises: what induces movement? With respect to this question, MP has been pursuing the intuition that agreement induces movement. The notion agreement involves uninterpretable features; and under a minimalist perspective, their existence raises the question: why do uninterpretable features exist in language? Seeking an answer to this question, MP explores the possibility that uninterpretable features exist as part of an optimal way of implementing movement, and MP articulates the probe-goal system, specifying the mechanisms of movement (from which the empirical content of LR and MLC follows). MP further formulates the Phase-Impenetrability Condition PIC that renders the complement domain of phase-head H "syntactically inert" upon the completion of phase HP. Finally, MP replaces the notions "interpretable and uninterpretable" by the notions "valued and unvalued," and this replacement means that assignment of feature-value entails loss of feature-distinction, and such entailment forces the strongly cyclic application of Transfer SCT that removes unvalued features in the process of valuation. Under SCT, then, feature-dissociation is understood to take place (in principle) at any point of derivation.

As shown above, pursuing the strongest minimalist thesis, MP has been advanced with specific proposals and intriguing results, which in turn generate new directions for further investigation.

Acknowledgement

This is a revised version of Kitahara 2003. I would like to thank Noam Chomsky, Chris Collins, Masuyo Ito, Yasuhiko Kato, Ruriko Kawashima, Yoichi Miyamoto, Andrea

Moro, Masayuki Oishi, Mamoru Saito, Shigeo Tonoike, and especially Samuel D. Epstein and T. Daniel Seely for valuable comments and helpful discussion. Part of this paper was presented at the 20th National Conference of the English Linguistic Society of Japan (Aoyama Gakuin University, 2002). I am grateful to the participants for clarifying remarks, in particular, Masayuki Ike-uchi, Richard Kayne, Masayuki Oishi, and Yuji Takano. The research reported here was supported in part by the J. William Fulbright Foreign Scholarship (2000–2002), the Center of Excellence in Human Sciences (CIRM, Keio University) of MEXT, and Grant-in-Aid for Scientific Research (C) (#16520258).

References

- Chomsky, N. 1955. *The Logical Structure of Linguistic Theory*, ms., Harvard University, Cambridge, MA. [Revised 1956 version published in part by Plenum, 1975; The University of Chicago Press, 1985.]
- Chomsky, N. 1965. *Aspects of the Theory of Syntax*. Cambridge MA: The MIT Press.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. 1986. *Knowledge of Language: Its nature, origin, and use*. New York: Praeger.
- Chomsky, N. 1991. Some notes on economy of derivation and representation. In *Principles and Parameters in Comparative Grammar*, R. Freidin (ed.), 417–454. Cambridge MA: The MIT Press. [Reprinted in *The Minimalist Program*, 1995, 129–166. Cambridge MA: The MIT Press].
- Chomsky, N. 1993. A minimalist program for linguistic theory. In *The View from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, K. Hale and S.J. Keyser, 1–52. Cambridge MA: The MIT Press. [Reprinted in *The Minimalist Program*, 1995, 167–217. Cambridge MA: The MIT Press].
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001a. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2001b. Beyond explanatory adequacy. *MIT Occasional Papers in Linguistics* 20.
- Epstein, S.D. 1999. Un-principled syntax and the derivation of syntactic relations. In *Working Minimalism*, S.D. Epstein and N. Hornstein (eds), 317–345. Cambridge MA: The MIT Press.
- Epstein, S.D., E.M. Groat, R. Kawashima and H. Kitahara. 1998. *A Derivational Approach to Syntactic Relations*. New York: OUP.
- Epstein, S.D. and T.D. Seely. 2002. Rule applications as cycles in a level-free syntax. In *Derivation and Explanation in the Minimalist Program*, S.D. Epstein and T.D. Seely, 65–89. Oxford: Blackwell.
- Epstein, S.D. and T.D. Seely. 2006. *Transformation and Derivations*. Cambridge: CUP.
- Kawashima, R. and H. Kitahara. 2003. Phonological content and syntactic visibility. *Gengo*

- Kenkyu(Linguistic Studies)*123: 137–170. [Reprinted in *Triggers*, 2004, A. Breitbath and H. van Riemsdijk (eds), 205–230. Berlin: Mouton de Gruyter].
- Kitahara, H. 2001. Topics in the minimalist program, ms., MIT. Paper presented at the LOT Winter School 2001, Amsterdam, The Netherlands.
- Kitahara, H. 2002a. Language design in generative grammar. In *Language, Culture and European Tradition*, S. Nakagawa (ed.), 73–89. Tokyo: Keio University Press.
- Kitahara, H. 2002b. Scrambling, case, and interpretability. In *Derivation and Explanation in the Minimalist Program*, S.D. Epstein and T.D. Seely (eds), 167–183. Oxford: Blackwell.
- Kitahara, H. 2003. Some notes on minimalist theorizing. In *Current Issues in English Linguistics*, M. Ukaji, M. Ike-Uchi and Y. Nishimura, 1–17. Tokyo: Kaitakusha.
- Uriagereka, J. 1999. Multiple Spell-Out. *Working Minimalism*, S.D. Epstein and N. Hornstein (ed.), 251–282. Cambridge MA: The MIT Press.

PART II

Minimalist tools and architectural concerns

Move F and PF / LF defectiveness

Brian Agbayani and Masao Ochi

Abstract

We offer a novel view of feature movement (Chomsky 1995). Our specific proposal is that when the target attracts the relevant feature F, the remnant category C may become defective not only for PF (as proposed by Chomsky (1995)) but also for LF. The analysis offers an answer to the puzzle discussed by Lasnik (2001) regarding why eliding the domain containing the defective category C can be an alternative to normally obligatory raising of C when C is a verbal/aux head, but not when C is a phrasal element. We seek to explain this dichotomy by proposing that defectiveness for either PF or LF motivates pied-piping, and that deletion as an alternative to pied-piping is available only in cases where pied-piping would otherwise be forced by just PF considerations.

1. Head movement, XP movement and ellipsis

Lasnik (2001) points to a peculiar asymmetry with respect to head movement vs. XP movement. He argues that in the case of heads, deletion of the phrase containing the head is, in certain constructions, an alternative to the normally obligatory raising of that head. This is not so, however, in the case of XPs: deletion is not an alternative to normally obligatory raising of an XP.

We first consider Lasnik's arguments regarding head movement. The first relevant construction is pseudogapping, which Lasnik argues is derived from overt object shift followed by deletion of the VP out of which the object has raised (Lasnik 1995). The following example is thus analyzed as the raising of *Bob* to [Spec, Agr-oP] but not of *believe* out of the lower VP in a split VP shell (Koizumi 1995).

(1) You might not believe me but you will Bob.

(2) [_{Agr-sP} you [_{TP} will [_{VP} V [_{Agr-oP} Bob_i [_{VP} ~~believe_t~~]]]]]]

Lasnik then addresses the question of why verb raising to the higher V is obligatory in non-elliptical structures:

(3) *You will Bob believe.

(4) You will believe Bob.

He assumes that in non-elliptical constructions in English the object raises to [Spec,

Agr-oP] and the verb raises to the higher V position overtly. Following Ochi's (1999a, b) development of Chomsky's (1995) feature movement theory, Lasnik then assumes that just the matching feature of the lower verb is attracted to check a strong feature in the higher V position in overt syntax, and that once the matching feature of the lower verb is attracted, the lower verb becomes phonologically defective (under the assumption that "isolated features and other scattered parts of words" may not be visible at the interface [Chomsky 1995:262]). A phonologically defective element causes a PF crash. To avoid PF crash, either the entire lower V is pied-piped, or the phrasal category containing the lower V is deleted. Deletion, it is assumed, renders the offending element invisible to the PF interface, so there is no PF crash.

Lasnik then considers sluicing – analyzed as wh-movement followed by IP deletion – as a parallel case (5). Crucially, if sluicing is IP ellipsis, then an auxiliary could not have undergone inversion to C (6), as an auxiliary cannot surface in sluicing contexts. However, without ellipsis, the auxiliary must raise to C (7).

- (5) Mary will see someone.
(Guess) Who ~~Mary will see t~~?
- (6) Who [_C will [_{IP} Mary see t]]?
- (7) *Who Mary will see t?

Under the feature movement approach, a matching feature of the auxiliary in I must raise overtly to C to check a strong feature. This leaves behind a phonologically defective item in I, which causes a PF crash unless the entire auxiliary is pied-piped or IP deletion applies. Lasnik draws two conclusions from these observations. First, there seems to be complementarity between normally obligatory head raising and phrasal deletion. Second, if this observation is correct, it supports the notion of feature movement.

This complementarity between raising and deletion does not hold in the case of XPs, however. The absence of an alternation between deletion and XP movement suggests that the EPP, which motivates phrasal movement to Spec, cannot be a matter of feature checking. Consider (8), with the proposed structure in (9) prior to raising of *she* to check a strong feature in Agr-s.

- (8) Mary said she can't swim, even though she (really) can swim.
- (9) [_{Agr-sP} [_{Agr-s} [strong F]] [_{TP} can [_{VP} she[F] swim]]]

If [strong F] of Agr-s attracts the matching feature of *she* and the whole category *she* pied-pipes, then (10) is obtained under VP Ellipsis.

- (10) Mary said she can't swim, even though she (really) can ~~swim~~.

However, VP-ellipsis without pied-piping is impossible for the structure in (9). This is shown in (11), where the VP-internal subject is deleted along with the rest of the VP.

- (11) *Mary said she can't swim, even though (really) can ~~she swim~~.

Lasnik (2001:360) then concludes:

"The only obvious way to exclude (11) is to demand that the subject raise. And the most straightforward way to guarantee that is to formulate the EPP so that it demands that the functional head of the clause have a specifier, just as in Chomsky 1982 and Chomsky 2000, as opposed to Chomsky 1995."

Thus, Lasnik concludes that the EPP does not reduce to a matter of feature checking. He further entertains the suggestion of Boeckx and Stjepanović (2001), following a proposal of Chomsky (2000), that head movement is a PF process. If head movement is a PF process, then, plausibly, it can interact with deletion (assuming that the latter is also a PF process), and the interaction of the two operations takes place in a single component, namely the phonological component after Spell-Out. If XP movement, on the other hand, is syntactic, potential interaction between deletion and XP movement would involve considerable "look-ahead" and much greater computational complexity, Lasnik argues.

Here we concur with Lasnik that, given the feature movement view, the category without F is uniformly defective for PF. However, in addition, we want to suggest that, as far as XPs are concerned, the remnant category is defective for LF as well. First, we assume a model in which there is no covert/LF movement. We argue that defectiveness for either PF or LF motivates pied-piping, and that deletion as an alternative to pied-piping is available only in cases where pied-piping would otherwise be forced by just PF considerations. In other words, deletion can remedy PF defectiveness, but not LF defectiveness; for the latter, it is necessary to pied-pipe to yield a well-formed output. We seek to address Lasnik's dichotomy (i.e., V can delete instead of pied-pipe, but XP never has the option of deletion) with the following observation: that if feature movement creates an element that is defective for LF, then deletion is never an option and pied-piping is obligatory. We thus attempt to address the nature of Lasnik's dichotomy.

2. PF and LF defectiveness

2.1 The vacuous movement hypothesis

Evidence for the LF defectiveness of an XP with F extracted comes from the behavior of *wh*-subjects and their interaction with sluicing. George (1980), Chomsky (1986) and others in one form or another have entertained the Vacuous Movement Hypothesis (VMH) for *wh*-subjects in English, stated simply in (12).¹

- (12) A *wh*-subject does not move locally to [Spec, CP].

(12) gives the question in (13) the analysis shown in (14).

(13) Who has fixed the car?

(14) [_{CP} C [_{IP} who has fixed the car]]

Subject questions have certain surface characteristics that make them different from non-subject questions, mainly the lack of aux inversion and do-support. A VMH analysis for subject questions is also suggested by patterns of ellipsis that arise only in such questions. Ellipsis with a remaining auxiliary is impossible in main clause non-subject questions.

(15) John will meet someone.

a. Who [~~John will meet~~ *t*]?

b. *Who will [~~John meet~~ *t*]?

Ellipsis with a remnant auxiliary is possible in main clause subject questions though. Thus, contrast (15b) with (16b).

(16) Someone will arrive early.

a. Who [~~will arrive early~~]?

b. Who will [~~arrive early~~]?

Note that the (a) examples in (15) – (16) involve sluicing, with the auxiliary deleted along with other material embedded in IP. (16b), however, is a case of VP ellipsis, where the *wh*-subject does not move and there is no aux inversion:

(17) [_{CP} [_{IP} who will [_{VP} ~~arrive early~~]]]

The VP ellipsis is licensed under sisterhood with a non-null functional head (Lobeck 1995). This is possible only if the aux and subject remain in situ. The availability of VP ellipsis with main clause subject questions is consistent with the VMH.

Evidence from topicalization is also suggestive of the structural analysis in (14). Lasnik and Saito (1992) point out that subjects do not undergo local topicalization. The contrasts in (18) illustrate the ungrammaticality of the intonational break that typically follows a topic that is the subject.

(18) a. John, I like *t*.

b. *John, *t* left.

c. John thinks that Bill, Mary likes *t*.

d. *John thinks that Bill, *t* likes Mary.

If topicalization is analyzed as movement to [Spec, CP], then it too is subject to the VMH, yielding the surface representation (19b) for (18b).²

(19) a. [_{CP} John [_{IP} I like *t*]]

b. [_{CP} [_{IP} John left]]

However, as discussed by Agbayani (2000) and others, the characterization of the VMH in (12) may be much too simple, as there is apparent evidence that the *wh*-subject in English paradoxically both raises and does not raise. It is such evidence

that suggests that in most cases, subject *wh*-questions in English involve overt feature movement from the *wh*-subject without category pied-piping; i.e., the [*wh*] feature of the subject raises to C, but the *wh*-subject category remains within [Spec, IP]. The ellipsis and topicalization evidence suggests that the subject category remains in [Spec, IP]. However, embedded subject questions form an island like non-subject questions (though cf. Chomsky 1986: 48–49), suggesting that feature movement has taken place in overt syntax, even though category pied-piping has not.

- (20) ??What does John wonder [_{CP} who bought *t*]?

We assume with Chomsky (1995) that feature attraction is constrained by the Minimal Link Condition (MLC), which prohibits attraction of a “farther” feature over a “closer” one (where distance is measured by “closest c-command”). According to the MLC, attraction of the [*wh*] feature of *what* over the [*wh*] feature of *who*, the closer relevant feature, violates economy. If feature movement obeys the MLC, then the existence of an island effect in (20) indicates only that *F(who)* has raised to the embedded C.³

- (21) What does John wonder [_{CP} [*F(who)*]-C [_{IP} who bought *t*]]

The question then arises as to why the subject category does not pied-pipe.

2.2 PF defectiveness

Thus far, we have presented evidence for overt feature movement without category movement in the case of *wh*-subjects in English. We assume that the prohibition on pied-piping the subject in subject *wh*-questions is related to PF adjacency between the raised feature and the category itself. The intuition is that if the category and its raised feature are adjacent, they may be interpretable at PF without category pied-piping. We thus propose the following for PF interpretability: *F* and its category are interpretable at PF if they are adjacent. Two elements are adjacent if no overt (i.e., phonetically realized) element intervenes between them. An economy condition which prohibits superfluous steps would therefore exclude pied piping in the case of subject questions, since adjacency between *F* and the *wh*-subject is already met without pied-piping.⁴

In light of this approach to *wh*-subjects in English, An (2004: 44–45) has argued based on extraposition data that a *wh*-subject obligatorily moves to [Spec, CP]. An’s reasoning involves data such as the following, which he uses to argue that the *edge* of a CP in non-canonical positions must be made “visible” for PF by having either a phonetically specified complementizer (22), or by having a phonetically specified item moved to [Spec, CP] (23) (we leave out here the specific details pertaining to this visibility condition; see An (2004) for discussion).⁵ An argues that if this requirement generally holds for CP in non-canonical positions (and this is strongly suggested by the ungrammaticality of (22b)), it leads to the conclusion that in cases like (23b) the subject has raised to [Spec, CP].

- (22) a. I believe very strongly [CP that John should be elected]
 b. *I believe very strongly [CP John should be elected]
- (23) a. I have wondered for a long time [CP what John likes *t*]
 b. I have wondered for a long time [CP who killed the president]

We assume with An the existence of such a PF visibility condition on the edge of CP in these contexts. We depart from An's analysis, however, on how the visibility condition may be satisfied. Suppose F of the *wh*-subject raises to C in (23b) and the subject category remains in [Spec, IP], as we have argued. For the purposes of PF, it is plausible that the edge of the CP domain is made visible by adjacency between the *wh*-subject category in [Spec, IP] and its moved feature. Thus, the feature checked in C, which has targeted the *edge* of the CP domain (which includes the Spec and head of the construction, as argued by Chomsky 2001a), is itself made visible via adjacency with its category, and this, we argue, serves to make the edge visible as well.

An additional issue that is raised is the question as to whether this "PF Defectiveness" approach can be distinguished from the "Agree at a distance and second Merge" approach advocated by Chomsky (2000, 2001a). Under this latter approach, a *probe* feature of a head enters into an Agree relation with a matching *goal* feature "at a distance". The head containing the probe feature to be checked may additionally require a Spec (the so-called "EPP" property), forcing the goal XP to raise and re-Merge as a Spec of the probe head. (24) shows the EPP requirement of C (separated from *wh*-checking), which must crucially apply in non-subject questions, but apparently not in subject questions if the VMH is correct, as shown in (25).

- (24) a. (I know) C you bought what
 {*+**wh*} {*+**wh*}
 EPP →

- b. (I know) what_{*t*} C you bought *t*_{*t*}
 EPP

- (25) a. (I know) C who bought candy
 {*+**wh*} {*+**wh*} →

- b. (I know) C who bought candy

Given this analysis, one could attempt to derive the effect of the VMH by positing that the EPP property is inactive in the case of *wh*-subjects, but why this should be the case is mysterious. Alternatively, it could be claimed that C is lacking in subject *wh*-questions (Radford 1997), but this invokes severe "look ahead", as C must not be selected for the Lexical Array in the first place (and not selecting C is not an option in non-subject questions). Further, there is reason to believe that C is uniformly present in interrogatives for clausal typing (Cheng 1991). From these considerations, we conclude that the VMH facts argue in favor of the "PF Defectiveness" approach.

2.3 Sluicing revisited

There is a situation, however, where the normal constraint on pied-piping the subject wh-phrase can apparently be suspended. The relevant context involves sluicing. Like non-subjects, wh-subjects are sluicing remnants, as shown in (26):

- (26) a. I heard John met someone/a professor. Tell me *who/which professor*
 ~~{John met t}~~
 b. I heard someone/a student left early. Tell me *who/which student*
 ~~{left early}~~
 c. I heard someone/a student left early. *Tell me ~~{who/which student left early}~~

(26b-c) show that it is necessary to have the wh-subject as a remnant in sluicing contexts. If sluicing is IP deletion, and if the subject category remains in [Spec, IP] while its [wh] feature raises to C, then the ungrammaticality of sluicing in (26c) is somewhat surprising (note also that (26b) could not have been derived through VP ellipsis, as there is no remnant aux licensing the deletion). If the subject remained in [Spec, IP], then it should be deleted along with the rest of the IP. But (26c) shows that this is not available. Again, under the feature movement approach, the wh-feature of the subject moves to C.

- (27) I heard someone/a student left early. Tell me [_{CP} F-C [_{IP} who/which student left early]]

Now suppose the subject NP does not pied-pipe, but instead is deleted by the sluicing operation, as in (26c). The facts are exactly like the ones that Lasnik points out with respect to VP ellipsis and NP movement: deletion apparently cannot remedy the lack of pied-piping in the case of XPs. If only PF conditions need to be satisfied here, then deletion should suffice to remedy the situation, and pied-piping need not occur. Recall that Lasnik's (2001) suggestion for such cases is that the EPP forces the XP to pied-pipe. However, we suggest that something else may be at work here. Suppose that the lack of category pied-piping in (27), with subsequent sluicing, is actually defective for LF (as will be explicated below). Given this, note that in (27) F and the wh-subject are presumably adjacent at LF, though the example is ruled out; this suggests that simple adjacency at LF is not the relevant factor for "repairing" the relation between an XP category and a feature extracted out of it.⁶

The situation becomes complicated when we consider more closely the deviance of deletion for XPs. Again, note that regardless of whether a wh-phrase is an object or subject, pied-piping of the wh-NP is obligatory in sluicing contexts:

- (28) a. John met someone/a student, but I don't know who/which student
 b. *John met someone/a student, but I don't know

- (29) a. Someone/a student left early, but I don't know who/which student
b. *Someone/a student left early, but I don't know

The obligatory nature of pied-piping in such cases follows if (a) the remnant category is LF defective, and (b) there is no movement after Spell-Out. The question then arises as to why (30) is good:

- (30) (Someone/a student left early, but I don't know) who/which student left

Given the account of the VMH outlined above, (29b) and (30) should be completely parallel as far as LF is concerned: the remnant category remains in [Spec, IP] while F is raised to C. The data reveal a stronger result than the observation that ellipsis simply cannot remedy the lack of XP movement. These facts suggest that the application of ellipsis actually *causes deviance* when XPs fail to move.

3. Proposal

In this section we consider an approach to LF defectiveness. We assume first of all the existence of cyclic Spell-Out (Uriagereka 1999, Chomsky 2000, 2001a, b). In particular, we suggest, following Chomsky's (2001b) phase-based theory, that Spell-Out is not required to spell out the whole object that is already constructed. Instead, it may spell out just part of the constructed domain; in particular, Spell-Out may apply to the complement domain of the relevant head (Nissenbaum 2000). This means that for the CP domain, IP may be the complement domain that is spelled out. Thus, when CP is constructed, either CP is spelled out, or IP may be spelled out (CP being spelled out later in the derivation). We suggest also that in the case of sluicing, IP must be spelled out as well as CP.

Next, we consider the nature of the "repair strategy" relevant for LF following feature movement. Chomsky (1995:262) has suggested that "isolated features and other scattered parts of words" may not be interpretable/usable at the interface. On the PF side, as suggested in section 2 in relation to the VMH, adjacency between F and its category may be all that is required. On the LF side, we suggest that the following holds:

- (31) F and its category are interpretable at LF if they both belong to the same phase.

This amounts to saying that some "repair" is required for LF reasons when the extracted feature F and the remnant category belong to different phases (i.e., when some features of the lexical item LI are separated from the rest of LI by a phase boundary). Otherwise, no repair is needed for LF reasons.⁷

Given this discussion, let us now return to the sluicing paradigm considered in section 2:

- (28) a. John met someone/a student, but I don't know who/which student
 b. *John met someone/a student, but I don't know
- (29) a. Someone/a student left early, but I don't know who/which student
 b. *Someone/a student left early, but I don't know
- (30) (Someone/a student left early, but I don't know) who/which student left

We assume that when sluicing applies, IP must be spelled out. As F is located in CP, pied-piping is required as a repair strategy in these cases (once again, we assume that there is no movement after Spell-Out). If pied-piping does not occur, then (31) is violated, and the derivation crashes at LF. In contrast, (30) does not involve sluicing. Thus, IP can be but need not be spelled out, and there is a derivation in which only CP is spelled out. As a result, F in CP and the remnant category in IP may belong to the same phase, and there is no need for pied-piping (and pied-piping for PF reasons is blocked because F and the subject wh-NP are adjacent). This provides a reason for why F may be in C and the remnant category in [Spec, IP] in (30) but not in (29b).

4. A-movement

Given condition (31), it would seem that A-movement, which is typically phase-bound, should not pied-pipe. Clearly, this is an undesirable result. However, note that (31) cares only about LF properties. If the remnant category is PF defective as well as LF defective, then pied-piping is required for PF purposes even when the movement does not cross any phase boundary (unless F and the remnant category are adjacent). Thus, pied-piping may still be forced for PF reasons in the case of A-movement, unless adjacency holds between raised F and the category as in the VMH cases.

This view of A-movement is interesting in light of ECM constructions, which, in the canonical cases, seem to involve adjacency between raised F and the ECM subject, but which nevertheless seem to require the ECM subject to pied-pipe. The notion that the embedded subject raises to the main clause in ECM contexts goes back to Postal (1974), and this idea has been revived within the minimalist program in one form or another (e.g., Lasnik and Saito 1991, Chomsky and Lasnik 1993, Koizumi 1995). Much of this work argues that the ECM subject raises/pied-pipes prior to Spell-Out. It is most obvious that pied-piping occurs in cases of intervening matrix adverbials (32)-(33).

- (32) a. I have found Bob₁ recently [t₁ to be morose] (Postal 1974)
 b. *I have found recently Bob to be morose
- (33) a. I've believed John₁ for a long time now [t₁ to be a liar] (Kayne 1985)
 b. *I've believed for a long time now John to be a liar

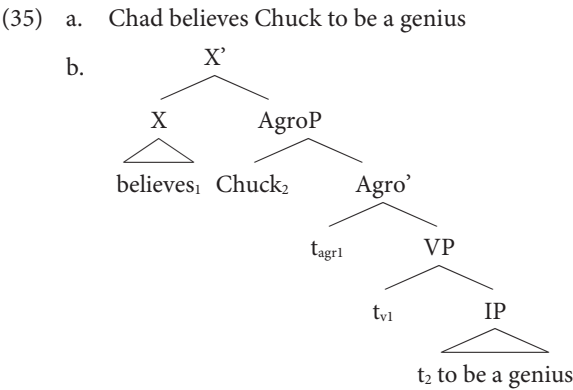
Note that these facts are clearly compatible with our idea that an intervening overt element would force raising of the ECM subject for PF reasons if its feature moved to a position to the left of the matrix adverbial. This is so because lack of adjacency between F and its category would cause the features to be scattered at PF, causing a PF crash.

The question then arises as to what forces raising of the ECM subject in cases like the following, where there is no apparent “intervening” overt element.

- (34) a. Chad believes Chuck to be a genius.
- b. We proved him to be guilty beyond a reasonable doubt.

In these cases, there is no surface evidence that pied-piping has occurred.

Let us first turn to Koizumi’s (1995) analysis of ECM, which we are adopting here. This analysis assumes an Agro position through which the matrix verb raises, and to whose spec the ECM subject raises into prior to Spell-Out. Koizumi’s analysis that raising of ECM subjects takes place before Spell-Out yields the partial structure shown below (Koizumi’s 1995:32).



Let us now reanalyze the situation in terms of our feature movement + pied-piping approach. If the verb has raised to position X prior to raising of the ECM subject, then it is possible that moving the feature of the ECM subject to Agro would maintain adjacency between the category of the ECM subject in the embedded IP and the moved feature (assuming that copies of an element (the verb in this case) “don’t count” as interveners at PF; this is true especially if copies are deleted in the course of creating the PF representation). PF adjacency would then block pied-piping of the ECM subject, avoiding a superfluous step, since F and its category would be adjacent without the application of pied-piping.

However, there is some evidence that the ECM subject does pied-pipe in such cases. Clearly visible pied-piping of the embedded subject to AgroP in V-particle constructions yields new binding/scope possibilities, whereas apparent lack of

pied-piping does not (data from Lasnik 1999; Lasnik suggests that in (37) *Agro* is not present).

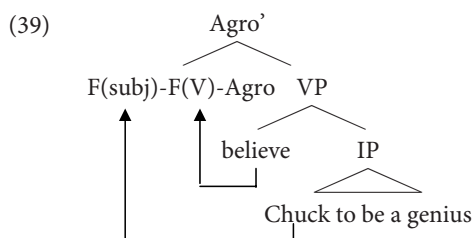
- (36) a. The DA made the defendants out [to be guilty] during each other's trials.
- b. The lawyer made no witnesses out [to be idiots] during any of the trials.
- (37) a. ?*The DA made out [the defendants to be guilty] during each other's trials.
- b. ?*The lawyer made out [no witnesses to be idiots] during any of the trials.

It is assumed that anaphora and scope relations are governed by output conditions at LF. Lasnik argues that the deviant status of the examples in (37) can be accounted for if features of the embedded subject related to anaphora/polarity remain in a lower position where they fail to c-command the anaphor/NPI, even at LF. On the other hand, in the examples in (36), the relevant licensing features raise to a higher position. If the raised F is not capable of establishing on its own a new binding or scope relation, then the contrasts above are easily accounted for, since the category (minus extracted F) of the embedded subject in (37) never pied-pipes high enough, even though F has raised to a higher position. The features that are responsible for binding and scope would remain in a lower position with the rest of the NP. The examples in (36) show that the application of category pied-piping may establish a binding/scope relation with an anaphor/NPI. Feature movement alone is incapable of establishing such a relation (contrary to the claim in Chomsky 1995:272, where it was assumed that F could have the ability to serve as a controller/binder). These facts suggest that the creation of new binding and scope relations requires category pied-piping, and that raising of F alone, without pied-piping, cannot yield a new binding/scope relation.

In light of these facts, it is interesting to note that ECM subjects in constructions with no apparent intervening material appear to pied-pipe too (like the cases in (36)), as they create the same binding/scope possibilities:

- (38) a. The DA proved two men [to have been at the scene] during each other's trials.
 - b. The DA proved noone [to be at the scene] during any of the trials.
- (Lasnik 1995)

We propose the following, given evidence that the ECM subject in English uniformly undergoes category movement. Under a strictly cyclic view and assuming that structure building proceeds in a "bottom-up" fashion, once *Agro* is introduced in the derivation, movement of the verb's feature must take place to *Agro*. Note that since V and *Agro* are adjacent, V remains in-situ even though its feature has "moved on" to *Agro*. Subsequent to V-feature raising to *Agro*, suppose *Agro* additionally forces F of the ECM subject to raise. At this point in the derivation, note that the verb's category intervenes between the ECM subject and F which has raised out of the ECM subject.



At this point in the derivation, there is an intervening element – the main clause verb – between F of the embedded subject and the embedded subject category. We suggest that it is at this point that pied-piping for PF reasons occurs. Thus, uniformly, the ECM subject is forced to raise to the matrix clause since there is always an intervener at the relevant point in the derivation between the subject category and its raised feature. Note also that subsequent to raising of the ECM subject, the feature of the verb moves on to a position c-commanding Agro, creating non-adjacency between the verb category and its feature (the ECM subject would intervene) and thereby forcing pied-piping of the verb. Note that this falls out only under a strongly derivational approach, in line with current minimalist approaches to syntax (Chomsky 2000, 2001a,b).

We further propose that AgroP is a phase. This is consistent with the view that A-movement is always complete within a single phase (Chomsky 2001a,b), and is compatible with Lasnik's claim that pseudogapping involves deletion of the complement of Agro (parallel to sluicing, where C is the phase head and its complement IP is deleted).⁸ Thus, when AgroP is constructed, it must be spelled out (the VP complement may be spelled out, as in the case of pseudogapping under Lasnik's analysis, but it need not be otherwise). We propose further that the decision to pied-pipe must be made at the end of each phase. In this particular case the decision to pied-pipe is made at the AgroP phase level.

5. Conclusion

We note again that feature movement in the case of XPs will yield both a PF defective category and an LF defective category under certain conditions. However, deletion cannot remedy LF defectiveness, which apparently can only be remedied by phrasal pied-piping.

Verb/aux movement must then not involve LF defectiveness at all – only PF defectiveness – since it does not require pied-piping of the entire head if F of verb/aux is moved higher. This would tie in with the notion that verb movement does not have semantic consequences. Thus, Chomsky (2001:30–31) suggests that such movement should be placed in the phonological component due in part to the notion that verb movement seems to lack substantial semantic consequences:

There are some reasons to suspect that a substantial core of head-raising processes...may fall within the phonological component. One reason is the expectation of (near-) uniformity of LF-interface representations... The interpretive burden is reduced if, say, verbs are interpreted the same way whether they remain in situ or raise to T or C, the distinctions that have received much attention since Pollock (1989)...[V]erbs are not interpreted differently in English vs. Romance, or [Mainland Scandinavian] vs. Icelandic, or embedded vs. root structures. More generally, semantic effects of head raising in the core inflectional system are slight or nonexistent, as contrasted with XP-movement, with effects that are substantial and systematic. (Chomsky 2001a: 37)

The quote from Chomsky (2001a) above is suggestive that verb/aux movement, which may not yield substantial semantic effects, may alternate with deletion as a way to remedy PF defectiveness incurred by the head category whose feature has been extracted.⁹ In light of this, we conclude with some speculations on why the X⁰/XP dichotomy arises at all.

The approach we have outlined here is in line with past work under the feature movement analysis, which we think has yielded some important insights (see Lasnik 1999, Ochi 1999a, b, Agbayani 2000; however, cf. Chomsky 2000, 2001a where feature movement is eschewed). For X⁰-movement, pure feature movement (i.e., Move F without category pied-piping) is found when the dislocated F and the remnant are (i) adjacent, or (ii) the phrasal category containing the remnant is deleted. For XP-movement, pure feature movement is found when the dislocated F and the remnant are (i) adjacent (for PF) and (ii) belong to the same phase (for LF).

The difference between the two kinds of movement may be the types of features involved in feature attraction. For XP-movement, the attracted features include LF interpretable features (such as ϕ -features of nouns), which may not be attracted in the case of X⁰-movement. It may be that attraction of F of a verb affects no features relevant for LF. Of course, this brings us close to a PF approach to head movement (Chomsky 2000, Boeckx & Stjepanović 2001). Nevertheless, our proposal opens up the possibility of keeping both head and XP movement in the narrow syntax.

Notes

1. Note that Chomsky (1986: 49–50) formulates the Vacuous Movement Hypothesis as follows: “vacuous movement is not obligatory at S-Structure.” (12) attempts to restate the VMH without reference to S-Structure, in accordance with assumptions in the Minimalist Program.
2. An additional related fact which suggests the VMH analysis comes from reflexive binding (from Lasnik and Saito 1992). Topicalization to [Spec, CP] in an embedded recursive CP structure allows an object reflexive to find its antecedent in the main clause, though such is not the case if the reflexive is a subject.

- (i) John₁ thinks (that) himself₁, Mary likes *t*
- (ii) *John₁ thinks (that) himself₁, likes Mary

If the reflexive must crucially raise to [Spec, CP] in order to find its antecedent in the main clause, then the ungrammaticality of (ii) falls out from the inability of the subject to be topicalized to [Spec, CP] under the VMH.

3. See Ochi (1999a, b) and Agbayani (1998) for evidence that category pied-piping, unlike feature movement, does not obey the MLC which constrains Attract.

4. In light of this approach, we need to address certain additional issues related to the formation of subject questions. For one, we note the lack of inversion (and do-support) in main clause subject questions. One view consistent with the present approach would be to assume that inversion in main clause wh-questions is triggered by the presence of a wh-phrase in [Spec, CP]. If so, then inversion is an ancillary property of main clause wh-questions, perhaps applying in the post-Spell-Out derivation to PF (see Chomsky 2000: 149 n. 68; Boeckx and Stjepanović 2001 for a related suggestion along these lines for head movement in general).

Second, it is generally assumed that aggressively non-D-linked questions require overt wh-movement. This pattern is found in “What-the-hell” questions in English.

- (i) a. What the hell did you give to whom?
- b. * What did you give to who the hell?

If we extend this generalization to wh-the-hell subject questions, we are led to the hypothesis that the wh-the-hell subject moves to [Spec, CP] in overt syntax.

- (ii) Who the hell can understand his proposal?

However, VP-ellipsis is licensed in (iii), suggesting that the wh-the-hell subject remains in-situ.

- (iii) A: I cannot understand his proposal.
- B: Who the hell can?

We would like to propose the following. According to Attract Closest, the interrogative C (in English) attracts the closest wh-phrase. In (ia), *what*, being the closest wh-element from the viewpoint of the target, is the one that is attracted. Let us assume that *whom* is not attracted and is licensed in-situ via some mechanisms like unselective binding. What this means is that a wh-phrase can in principle be licensed in-situ. Given this, we would like to propose that unlike regular wh-phrases, wh-the-hell has features that need to be checked off by the interrogative C. This is why (ib) is ungrammatical: *who the hell* needs to be attracted by C but it is not the closest wh-element. Turning to (ii), we would like to propose that the relevant features of *who the hell* are attracted and checked off by C, although for the reasons discussed in the main text, there is no pied-piping required. This is why VP-ellipsis is licensed in (iii).

5. An’s proposed visibility condition is re-stated here:

- (i) Intonational-Phrase Edge Condition (IPEC)
The edge of an I-Phrase cannot be empty. (An 2004: 30)

6. The question arises here as to why pied-piping cannot occur covertly in these cases. Chomsky (1995) suggests that pied-piping occurs for PF reasons, and that covert movement would thus

be only feature movement. We have noted, however, that pied-piping may occur for LF reasons as well. We suggest here a much stronger approach: that there is no covert movement of any kind; this would exclude both covert feature movement (cf. Chomsky 1995) and covert pied-piping.

7. This is in line with Chomsky's (2000, 2001a,b) view of phases, according to which elements belonging to a single phase are visible for the computational system (which is why Agree can hold of them), but elements belonging to distinct phases cannot access one another.

8. We should note that there are alternative analyses of pseudogapping in English which do not associate the phenomenon with phrasal deletion. See, for example, the original proposal in Levin (1979), and more recently Agbayani and Zoerner (2004).

9. This suggests that putative cases of N-to-D raising, which have been argued to yield certain semantic effects, may involve a form of phrasal pied-piping in the nominal system.

References

- Agbayani, B. 1998. Feature Attraction and Category Movement. PhD dissertation, UC Irvine.
- Agbayani, B. 2000. Wh-Subjects in English and the vacuous movement hypothesis. *Linguistic Inquiry* 31: 703–713.
- Agbayani, B. and E. Zoerner. 2004. Gapping, pseudogapping and sideward movement. *Studia Linguistica* 58: 185–211.
- An, D. 2004. Clauses in non-canonical positions in PF. Ms., University of Connecticut, Storrs.
- Boeckx, C. and S. Stjepanović. 2001. Head-ing toward PF. *Linguistic Inquiry* 32: 345–355.
- Cheng, L. 1991. On the Typology of Wh-questions. PhD dissertation, MIT.
- Chomsky, N. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge MA: The MIT Press.
- Chomsky, N. 1986. *Barriers*. Cambridge MA: The MIT Press.
- Chomsky, N. 1995. Categories and transformations. In *The minimalist program*, N. Chomsky, 219–394. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–115. Cambridge MA: The MIT Press.
- Chomsky, N. 2001a. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–50. Cambridge MA: The MIT Press.
- Chomsky, N. 2001b. Beyond explanatory adequacy. *MIT Occasional Papers in Linguistics* 20. Cambridge MA: MITWPL.
- Chomsky, N. and H. Lasnik. 1993. The theory of principles and parameters. In *Syntax: An international handbook of contemporary research*, vol. 1, J. Jacobs, A. von Stechow, W. Sternefeld and T. Vennemann (eds), 506–569. Berlin: Walter de Gruyter.
- George, L. 1980. Analogical Generalization in Natural Language Syntax. PhD dissertation, MIT.
- Kayne, R. 1985. Principles of particle constructions. In *Grammatical Representation*, J. Guéron, H.G. Obenauer and J.Y. Pollock (eds), 101–140. Dordrecht: Foris.
- Koizumi, M. 1995. Phrase Structure in Minimalist Syntax. PhD dissertation, MIT.

- Lasnik, H. 1995. Last resort. In *Minimalism and Linguistic Theory*, S. Haraguchi and M. Funaki (eds), 1–32. Tokyo: Hituzi Syobo.
- Lasnik, H. 1999. Chains of arguments. In *Working Minimalism*, S. Epstein and N. Hornstein (eds), 189–215. Cambridge MA: The MIT Press.
- Lasnik, H. 2001. A note on the EPP. *Linguistic Inquiry* 32: 356–362.
- Lasnik, H. and M. Saito. 1991. On the subject of infinitives. *CLS* 27: 324–343.
- Lasnik, H. and M. Saito. 1992. *Move α : Conditions on its application and output*. Cambridge MA: The MIT Press.
- Levin, N. 1979. Main-verb Ellipsis in Spoken English. PhD dissertation, Ohio State University. [Published 1986. New York: Garland Press].
- Lobeck, A. 1995. *Ellipsis: Functional heads, licensing, and identification*. New York: OUP.
- Nissenbaum, J. 2000. Investigations of Covert Phrase Movement. PhD dissertation, MIT.
- Ochi, M. 1999a. Constraints on Feature Checking. PhD dissertation, University of Connecticut, Storrs.
- Ochi, M. 1999b. Some consequences of Attract F. *Lingua* 109: 81–107.
- Pollock, J-Y. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistic Inquiry* 20: 365–424.
- Postal, P. 1974. *On raising*. Cambridge MA: The MIT Press.
- Radford, A. 1997. *Syntactic Theory and the Structure of English: A minimalist approach*. Cambridge: CUP.
- Uriagereka, J. 1999. Multiple spell-out. In *Working minimalism*, S. Epstein and N. Hornstein (eds), 251–282. Cambridge M: The MIT Press.

True optionality: When the grammar doesn't mind*

Theresa Biberauer & Marc Richards
University of Cambridge

Abstract

Optionality in movement operations is widely held to be fundamentally incompatible with a feature-driven approach to displacement in which movement must be triggered and triggered movement is obligatory. We argue that semantically vacuous alternations in surface order are not an imperfection of the language system but fall out on principled grounds once movement is viewed as internal merge (cf. Chomsky 2004). Minimalist economy principles are then predicted to allow for indeterminacies in the application of movement operations in exactly the same way as they do for external merge: as long as the relevant formal trigger is motivated, the grammar cannot discern between two (or more) legitimate options for satisfying it, yielding the effect of 'true optionality'. We demonstrate the validity of this prediction with two case studies from the empirical domain of EPP-satisfaction in Germanic (optional verb movement in Afrikaans embedded clauses, and optional expletives in impersonal passives in Afrikaans, Dutch and Faroese), before offering some supporting evidence from *wh*-interrogatives in Afrikaans, LBC violations in Russian and Ancient Greek, and quantifier stranding in Arabic.

1. Introduction: A familiar problem

The Minimalist Program (MP) of Chomsky 1995 *et seq.*¹ seeks to eliminate language-specific properties of the computational system by reducing them, so far as possible, to principled explanation in terms of interface conditions (and other general properties). In this light, economy principles reduce to the requirement that elements and operations must contribute to interface interpretations – elements and operations that have no such effects are superfluous and unmotivated (cf. MI:99). Two antagonistic principles thus emerge, representing the two logical poles of superfluosity: (a) 'don't do too much' (cf. Thráinsson 2003: 152), which can be termed Last Resort (LR), and (b) 'don't do too little', the principle of Full Interpretation (FI), whose force is captured in such statements as "Minimize superfluous symbols" and "α enters the numeration only if it has an effect on output" (MP:294(76)).² The operation Move (internal merge) is therefore rigidly constrained: LR dictates that movement is necessarily motivated, so

that an element cannot move in the absence of a feature triggering its displacement (the EPP-feature of MI, DbP, BEA; the strong (D-)feature of MP), whilst FI ensures that an element is *obliged* to move if such a(n EPP-)feature is present (i.e. it cannot *not* move). Together, LR and FI imply that a given set of lexical items, as defined by the numeration, cannot exhibit optionality of the form ‘move vs. don’t move’. Since movement is the operation that feeds the surface order of constituents, it follows that word-order alternations involving (what appears to be) the same set of lexical items should not exist.

Of course, such alternations are abundantly attested in natural language, as exemplified here by German scrambling:

- (1) a. *Er hat oft ein Buch gelesen.*
 He has often a book read
 ‘He often read a (non-specific) book.’

[weak reading; cf. Diesing 1992]

- b. *Er hat ein Buch oft gelesen.*
 He has a book often read
 ‘There’s a book that he often read.’

[strong reading; cf. Diesing 1992]

If (1b) is the output of the same numeration as (1a), then clearly (1b) violates LR – it is in that sense an ‘uneconomical’ derivation, featuring the unmotivated (non-feature-driven) movement of the direct object. As argued in key works by Reinhart (1995) and Fox (2000), such ‘marked’ operations (QR, scrambling, stress-shift, etc.) are only sanctioned in the case that they give rise to an interpretation that would not otherwise be available (that is, the ‘economical’, ‘unmarked’ derivation, (1a) in the above example, will block the marked derivation, here (1b), unless the latter “meets an interface need” that the former fails to meet).³

We therefore expect interpretive differences in alternations of the kind in (1), which is indeed what we find (cf. the weak vs. strong readings indicated). However, whilst the Reinhart/Fox view of interface economy clearly resonates with the definitions of FI given above (i.e. operations cannot be superfluous, but must have an output effect), it clearly involves global computation in the form of comparison and blocking of derivations, lookahead to the interface, etc.; further, as already noted, it implies non-feature-driven movement, which LR excludes (at least if taken as a hard constraint; see Heck & Müller 2000 for an alternative view premised on a soft LR). Chomsky (MI, DbP) removes both of these problems via a single mechanism, the optional EPP-feature, which may be assigned to phase heads in accordance with FI, stated as follows:

- (2) The natural suggestion [for constraining optional operations – MTB, MDR] ... is a general economy principle: an optional rule can apply only when needed to yield a new outcome. (DbP: 34)

As a formal syntactic trigger, the EPP-feature both localizes the application of optional operations and removes the optionality from the computational system itself, placing

it back in the numeration (where it more naturally, indeed unavoidably, belongs). Optionality of the kind in (1) is therefore unproblematic in the context of MP: structures featuring what appear to be the same lexical items but having different interpretations are assumed to be the output of different numerations,⁴ one with and one without the relevant EPP-feature. Thus, for (1b), v^* is associated with an extra EPP-feature, whereas v^* in (1a) lacks this feature (DbP: 34ff). The move (1b) vs. non-move (1a) alternants differ in interpretation, as required by FI and LR.

The assignment of an optional EPP-feature must therefore result in interpretive effects at the interface (either directly, as in the scrambling example, or indirectly, in the form of successive-cyclic movement to a higher phase) – that is, an ‘edge feature’ gives rise to ‘edge effects’ (cf. note 4). This minimalist account of optionality, however, now clearly makes a new prediction: since word-order alternations involving (what appears to be) the same set of lexical items actually imply distinct numerations differing only in the presence vs. absence of EPP-features, there can be no semantically vacuous optionality – i.e. *true* optionality that cannot be ascribed to interpretive differences at the interface and thus to distinct numerations. A given numeration can only give rise to a single PF output (linear string), as distinct PF outputs imply distinct LF outputs (via the mediation of additional EPP-features, as per (2), which in turn imply different numerations).

Such true, semantically vacuous optionality is, however, prevalent in human language. Thus Modern Spoken Afrikaans allows alternations in the placement of finite auxiliaries in embedded clauses, as in (3), which are not associated with interpretive differences (both the verb-final structure in (3a) and the apparent verb-second (V2) structure in (3b) receive embedded- rather than main-clause interpretations and intonation).⁵

- (3) a. *Ek weet dat sy dikwels Chopin gespeel het.*
 I know that she often Chopin played has
 b. *Ek weet dat sy het dikwels Chopin gespeel.*
 I know that she has often Chopin played
 ‘I know that she has often played Chopin.’

Since the apparent ‘extra’ V-movement in (3b) has no interpretive effects, the trigger (EPP-feature) is unmotivated – it violates (2)/FI. Alternations of the kind in (3) are therefore unexpected on current assumptions – a given numeration either will or will not contain the EPP-feature required to trigger movement, resulting in respectively different interpretations. How, then, can a single grammar (/numeration) sanction semantically vacuous optionality of this kind?

Our answer to this question proceeds as follows. In section 2 we reassess the notion of ‘costliness’ of operations under current minimalist assumptions and set out the role played by EPP-features in providing the only computationally viable (i.e. local) evaluation metric. This will allow us to reclaim a good measure of optionality from the numeration and place it back in the derivational component, offering a

direct challenge to the view that a given numeration can only yield a single PF output (cf. above). After proposing a minimalist typology of EPP-satisfaction on the basis of Germanic (section 3), section 4 then demonstrates how one of these modes of EPP-satisfaction exploits exactly the kind of syntactic indeterminacy identified in section 2, giving rise to two dimensions of truly vacuous, system(at)ic optionality. Section 5 offers some further evidence that the grammar operates in this way, presenting three further examples of cases where the minimalist computational system simply “doesn’t mind”. Section 6 concludes.

2. Assessing the costs

The first clue as to where optionality truly lies can be found by considering those cases that instantiate the reverse of the implication identified in the previous section. The logic of the EPP-introduction rule of (2) is such that there is a 1:1 relation between PF representations and numerations (the view we seek to challenge below; cf. also note 4). However, the relation between PF and LF is only indirect (mediated via numerations, cf. the standard Y-model of MP), so that whilst different PFs correspond to different LFs (by virtue of different numerations), this does not imply that different LFs necessarily correspond to different PFs. Where multiple LFs are the product of the *same* numeration, then the LF:PF ratio will be many: 1. This scenario is exemplified in cases of so-called ‘A-reconstruction’, as in (4a).

- (4) a. *Someone must be (someone) in the garden.*
 must >> someone
 someone >> must
- b. *There must be someone in the garden.*
 must >> someone
 *someone >> must

Bobaljik (2002) discusses such structures in a single-cycle, copy-spellout approach to movement and interpretive asymmetries. To account for the fact that LF may interpret (“privilege”) either copy of *someone* in (4a), hence the scope ambiguity between the existential and the modal, but may interpret only the lower (PF-privileged) copy in (4b),⁶ Bobaljik argues that both ways of attaining the narrow-scope interpretation of the existential (*must* >> *someone*) are equally ‘costly’ from the point of view of the interfaces. Assuming (i) a last-resort PF-rule of expletive insertion and (ii) a general, though violable, economy condition (“Minimize Mismatch”, which states that the same copy should be privileged at both PF and LF, so far as this is possible), the narrow-scope reading of *someone* violates (i) in (4b) and (ii) in (4a), hence neither structure blocks the other. The wide-scope reading is then unavailable in (4b) since (i) is blocked by the availability of the more economical alternative (4a) (which, unlike (4b), does not violate (ii) on this reading).

Despite the fact that all the spell-out choices are made 'locally', i.e. at PF, there is still a residue of globality about this proposal, since the economy condition (ii) requires PF to 'know' which copy LF is going to privilege, implying the comparison of competing PF outputs for faithfulness with LF. Further, we do not subscribe to the view that *there* is a PF-inserted expletive (see section 3 for a syntactic account of the kinds of facts that lead Bobaljik to his PF-based conclusion, and Richards & Biberauer 2005 for more relevant discussion); (4a) and (4b) are therefore the product of different numerations (one with the expletive and one without) and so do not compete in this way. The alternation we are interested in here, then, is not that between the PF outputs of (4a) and (4b), but rather the LF alternation internal to (4a), where a single numeration delivers two distinct LF representations. We would like to pursue the intuition that the two LF interpretations in (4a) are somehow equally costly (economical).

The idea that cost considerations have a role to play in determining the applicability of operations and thus the optimality of derivations (and hence, potentially, optionality) is explored, most notably, in MP (Chapter 2, originally published in 1991) and Kitahara 1997, and its effects can still be felt in the form of the Merge-over-Move constraint, which survives at least until DbP. The basic premise, we believe, is sound from the minimalist perspective; that is, the computational system will determine a single output in so far as it has grounds to choose amongst options, but reserves the right not to be fully deterministic wherever such grounds are lacking (i.e. where a decision cannot be made on grounds of system-internal economy and it is simply more efficient to let the user decide, so to speak). The question is, what constitutes 'equally costly' in the current minimalist context?

Formerly (MP: 138–45), cost was computed by the global comparison of competing derivations for compliance with formal economy principles based on the number of steps (where fewest steps would win) or the 'type' of operations employed (where UG principles were less costly than language-specific ones). Optionality would then result when two convergent derivations were equally minimal in cost and thus both of them optimal – see, for example, Chomsky's (MP: 143ff.) analysis of optionality in French infinitival raising. In order to allow for optionality in the Probe-Goal-Agree framework, however, the question of 'equal cost' must be re-addressed in terms of the purely *locally* determined, single-cycle computational system of MI/DbP, in which movement (internal merge) is immediately triggered by (generalized) EPP-features, the covert component is eliminated, and accountability to the Strong Minimalist Thesis (SMT) is paramount.

What counts as 'costly' is, by definition, a matter of economy – that much stays the same, of course. However, since LR and FI are now the only economy principles to which a strictly local and minimalist (SMT-compliant) system can have recourse (section 1), notions of formal, system-internal economy and thus of derivational optimality are unformulable. Instead, an operation Ω will now be just as costly as any other operation Ω' that may potentially apply at a given stage σ of the derivation if Ω and Ω' are both valid ways of satisfying the formal imperative F driving operations at

σ (i.e. both Ω and Ω' result in a well-formed structure, obey locality, etc.). LR and FI simply require that F be (immediately) satisfied; they do not specify how. Therefore, Ω and Ω' are optional operations with respect to each other. (As we will see in section 4, piedpiping offers perhaps the clearest evidence of this indeterminacy in action: whilst independent constraints on movement may place upper and lower limits on the amount of material that can be piedpiped to satisfy F, variation within those limits is completely free.) In short, minimalist economy principles compute cost not on the formal satisfaction of F, but on the presence of F to begin with (i.e. F's functional motivation) such that, if F goes unsatisfied, a numeration *without* F must be used.

The semantic optionality (ambiguity) of (4a) now follows straightforwardly once we recognize that the F in question here is the obligatory EPP-feature of T. For reasons that are not fully understood, T is obligatorily associated with an EPP-feature (perhaps universally (MI: 109); cf. the original Extended Projection Principle of GB (Chomsky 1982), requiring that every clause have a structural subject). Since it is independently and unavoidably present (for whatever reason) and not added by optional rule as in (2), this EPP-feature comes for free and so does not need motivating in the form of obligatory additional interpretive effects at LF (in other words, the PF effect suffices alone, essentially). Thus LF is free to interpret either copy of the A-raised *someone* (unlike the case of the optional EPP in (1), where economy/FI dictates that the top, EPP-associated copy must be interpreted), resulting in the observed interpretive optionality – both LFs are equally costly. The conceptual neatness of the system (an instance of perfect design?) can be summarized as follows:

- (5) Optional rules (operations, EPP-features, ...) feed obligatory interpretations;
 Obligatory rules (operations, EPP-features, ...) feed optional interpretations

EPP-features thus provide us with the requisite evaluation metric for computing cost, one that is fully blind and local in its syntactic implementation (interpretive effects are the result rather than the driving force), with no comparison of outputs or PF-LF interaction or counting of chain links/derivational steps or stipulative statements of the kind "X is cheaper than Y" and so on. The distinction between optional ('marked') and obligatory ('unmarked') EPP-features opens up a computational loophole in that the economy rationale in (2) says nothing about obligatory EPP. Since (2) applies specifically to the assignment of *optional* EPP (to phase heads), obligatory EPP is freed from the FI/economy requirement that it be cashed out in the form of (extra) LF effects. Obligatory EPP is present for free in a numeration (perhaps being associated to the relevant functional head already in the lexicon); only optional EPP comes at a cost, detectable at the interface.

In the following sections, we show that obligatory EPP-features are responsible not only for cases of *partial* semantic equivalence as in (4a/b), but that they can also give rise to *total* semantic equivalence (i.e. true optionality) of the kind demonstrated above for Afrikaans embedded clauses. We argue that the satisfaction of T's EPP is at stake in both (3a) and (3b) alike; since this feature is obligatorily present, no 'new

interpretations' need result from its satisfaction. The optionality arises not from the presence vs. absence of this feature but rather from the (size of the) category that satisfies it – the nature of the Agree relation feeding EPP-satisfaction is such that multiple options are independently available for achieving this.⁷ Since it is the same feature being satisfied in both cases, each option is equally costly and thus semantically equivalent. All the grammar requires is that T's EPP-feature be satisfied; it doesn't mind how.⁸

3. A case study: the typology of EPP-satisfaction in Germanic

Let us now sketch out a theory of EPP-satisfaction that will define the range of possible options for satisfying this feature on T. Semantically vacuous, free variation will arise just in case a single system allows for more than one option; this is because, as discussed above, the minimalist economy principles (LR/FI) have no way to select between these options. It will emerge that Afrikaans instantiates exactly the kind of underdetermined system predicted by minimalist EPP-theory (that is, the theory of EPP-features in section 2 combined with the typology of EPP-satisfaction developed below).

We start with a brief summary of our technical assumptions, adopting the standard derivational architecture of Chomsky's Probe-Goal-Agree system (MI/DbP/BEA). We assume that 'checking' relations between heads (features) are established by the operation Agree, effecting valuation and deletion of uninterpretable features under matching (nondistinctness) between a probe and a goal. Move to Spec-Probe (and the spec-head configurations thus created) is no longer primary; rather it is a composite operation (comprising Agree + Piedpipe + Merge) that only obtains if the probe is associated with an EPP-feature. EPP-features, as we have seen, are nonthematic selector features that can be associated with any functional head, triggering obligatory movement wherever they are present, and come in two 'types': obligatory EPP-features, which are inherently (perhaps lexically) associated with a given functional head – these include the EPP-feature associated with T; and optional EPP-features, which may optionally be assigned to a functional head (perhaps only to *phase* heads – cf. MI: 109 (24)) and which result, where present, in obligatory 'new interpretations'. Since Move (internal merge) is parasitic on Agree, the postulation of such 'generalized' ('pure') EPP-features that can be associated with any functional head is not the same as saying that a given EPP-feature will indiscriminately attract any category to its specifier: only elements which first enter into an Agree relation with the relevant functional head may move to it. Finally, there is the operation Piedpipe, by which Goals (heads) determine a phrasal category P(G) for EPP-driven movement to Spec-Probe.

Given the above, the satisfaction of T's obligatory EPP-feature [EPP(T)] requires an Agree operation to identify the goal category that moves to satisfy it. In the case of T, a set of unvalued ϕ -features functions as probe, and thus the goal in this case is a

corresponding interpretable set of ϕ -features c-commanded by T, i.e. the closest accessible nominal category in T's sister domain. This means that, in effect, EPP(T) still acts as the strong D/N feature of MP: it is satisfied by an element bearing the categorial feature [D].

This, however, is as far as it goes – beyond this the minimalist system has nothing more to say about the satisfaction of EPP(T); any further requirements or restrictions can only be stipulated. We would like to argue that there is therefore room for at least two dimensions of parametric variation in the manner in which EPP(T) is satisfied. Specifically, languages vary as to the *source* (location) and *size* of the nominal category that values T's ϕ -set (that is, the goal in the T-initiated Agree operation that feeds the movement operation into Spec-TP).

Regarding the source of the goal, we follow Alexiadou & Anagnostopoulou (1998), henceforth A&A, in assuming that the nominal category that agrees with T may be associated with one of two categories: either (i) the ϕ -features of the DP argument in Spec- ν P (i.e. the 'standard' procedure), or (ii) the ϕ -features of the agreement morpheme on the verbal head in rich-agreement languages (which A&A describe as "verbal agreement morphology with the categorial status of a pronominal element", i.e. a ϕ -bearing [D]-morpheme, and which Bobaljik & Thráinsson 1998 take to be a "separate agreement morpheme", stored as an independent lexical item). Essentially, then, the goal sought by T may be either D(P) or V_D , depending on the language.

Granted this much, the minimalist system is actually predicted to allow for two further possibilities for satisfying T's EPP given the availability of the operation Piedpipe. The two extra possibilities, corresponding to the two 'sources' above, affect the size of the category piedpiped by the goal: potentially, either (iii) DP in Spec- ν P piedpipes along the whole ν P when it raises, or (iv) V/ ν piedpipes along the whole ν P when it raises. Both (iii) and (iv), then, will result in the raising of T's complement (ν P) to Spec-TP.⁹

Let us refer to the two standard cases of EPP-satisfaction in (i) and (ii) as *spec-raising* and *head-raising*, respectively (the former instantiated by English, the latter by *pro*-drop languages such as Greek). Then, in addition to spec- and head-raising, we expect to find EPP-satisfaction via ν P-raising – either spec-driven or head-driven (characterizing Afrikaans and German, respectively). We dub these modes *spec-piedpiping* (i.e. (iii)) and *head-piedpiping* (i.e. (iv)); the four modes are summarized in (6).

(6) Typology of EPP(T)-satisfaction

	Probe [D]-on-Vf	Probe [D] in outer Spec- ν P
– piedpipe ν P	Head-raising (<i>Greek</i>)	Spec-raising (<i>English, MSc</i>)
+ piedpipe ν P	Head-piedpiping (<i>German, Icelandic</i>)	Spec-piedpiping (<i>Afrikaans, Faroese</i>)

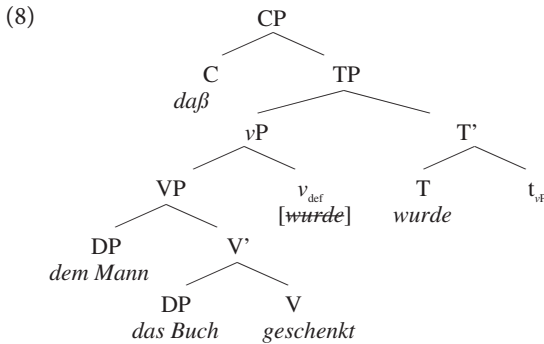
<i>Language</i>	<i>Source of ϕ-features (goal)</i>	<i>EPP movement</i>
English, MSc	D(P) in outer Spec- ν P	DP-to-Spec-TP
Italian (<i>pro</i> -drop)	ϕ -features on V-morphology	ν -to-T
German, Icelandic	ϕ -features on V-morphology	ν P-to-Spec-TP
Afrikaans, Faroese	D(P) in outer Spec- ν P	ν P-to-Spec-TP

It is important to note that the existence of these 'extra' modes is actually the null assumption given the current minimalist technology and its operation Piedpipe – once we adopt the central insight of A&A, the ν P-raising modes (essentially, 'Italian + Piedpipe') can only be excluded by stipulation. Thus a full and principled exploitation of the minimalist technology delivers a four-way rather than simply two-way typology of EPP(T)-satisfaction.

A number of subject-related phenomena that have caused long-standing problems in the literature can be readily accounted for via the proposed parametrization of EPP-satisfaction. In particular, the fact that nominative arguments may remain unraised (i.e. in a low, presumably ν P-internal position) in a number of Germanic languages (cf. (7)) demands an account of how the EPP is satisfied in these cases, especially since the insertion of an expletive into Spec-TP is categorically barred in German and Icelandic (cf. (7d-e)).

- (7) a. ...*daß dem Mann das Buch* *geschenkt wurde.* [German]
 that the-DAT man the-NOM book presented became
 '...that the book was given to the man.'
- b. *Bij dit geluid liepen hem de rillingen over de rug.* [Dutch]
 by this noise leapt him-OBL the shivers over the back
 'At that sound, shivers crawled up his spine.'
- c. *Í gær voru konunginum gefnir hestar.* [Icelandic]
 yesterday were-3PL king.the-DAT given horses-NOM
 'Yesterday horses were given to the king.'
- d. *Gestern ist (*es) ja doch ein Mann gekommen.* [German]
 yesterday is (Expl) indeed a man come
 'Yesterday there did after all arrive a man.'
- e. *Í gær hefur (*það) komið strákur.* [Icelandic]
 yesterday has (Expl) come a.boy-NOM
 'Yesterday there came a boy.'

Existing accounts of these facts face a number of problems (see Richards & Biberauer 2005 for full discussion). On our approach, both the ban on expletives from Spec-TP and the lack of nominative 'subject'-raising receive a simple, unified account. Since, by hypothesis, the languages in question are all [+ piedpipe ν P] for the purposes of EPP(T)-satisfaction, Spec-TP is occupied by the entire raised ν P, thus bleeding both the insertion of the expletive and the (need for) raising of the subject DP to this position. The resulting structure is illustrated in (8).



The typology of EPP-satisfaction has further implications for the syntax of expletives. In particular, it makes a strong prediction surrounding the conditions under which expletives are introduced into the grammatical system, one that finds considerable support in the diachronic domain (again, we refer the reader to Richards & Biberauer 2005 for discussion of the diachronic facts).

As stated above, we assume that ‘rich’ verbal inflection reflects an interpretable ϕ -set¹⁰ (‘D-feature’) on V/ v which can satisfy T’s morphological requirements (i.e. value T’s uninterpretable ϕ -set and raise for EPP), giving rise to the ‘head-seeking’ type of languages in the left-hand column of (6). We therefore predict that the loss of rich verbal inflection is a sufficient condition for a language to shift from being a “Probe [D]-on-Vf” language to a “Probe [D] in Spec- vP ” language, i.e. to shift rightwards in terms of table (6) from the head-seeking type to the spec-seeking type. This is because the loss of agreement morphemes from the verbal paradigm will force the language in question to look elsewhere to find an appropriate category to satisfy T’s morphological requirements: since the V/ v head can no longer value T’s ϕ -set, the system must locate a goal in the specifier instead.

This, in turn, implies that the loss of suitably rich verbal inflection will lead to the requirement that Spec- vP be obligatorily filled in order to supply the necessary nominal feature(s). In the absence of an argument (raised or otherwise) in Spec- vP , this requirement must be met by means of a dummy element. Expletives, then, emerge as a necessary consequence of spec-seeking grammars and the inviolable requirement that EPP(T) be formally satisfied; we characterize these elements (Expl) as in (9).

- (9) *Expl* is a last-resort strategy for supplying vP with the nominal feature (‘D’/ ϕ) necessary for feeding piedpiping / spec-raising into Spec-TP and thus the satisfaction of T’s EPP-feature¹¹

In the case of head-seeking grammars, such expletives are rendered unnecessary by virtue of the verb’s nominal agreement morphology, which guarantees a ϕ -bearing goal for T. It is the loss of such morphology that leads to the emergence of expletives.

That the emergence (and eventual obligatorization) of the *there*-type, nonargu-

mental expletive is a function of morphological erosion is synchronically borne out in the modern inflectionally-impovertished Germanic languages (English, the Mainland Scandinavian (MSc) family, Modern Faroese,¹² and Afrikaans). Thus in Modern Faroese, for example, the expletive *tað* is obligatory in post-V2 position (10a), as it is in MSc (10b), in sharp contrast to inflectionally-rich Icelandic (7e); likewise, Afrikaans (10c) contrasts with German (7d):

- (10) a. *Í dag er *(tað) komin ein drongur.* [Faroese]
 today is (Expl) come a boy
 'Today a boy came.' (Vikner 1995: 227 (14d))
- b. *Igår er *(der) kommet en dreng.* [MSc (Danish)]
 yesterday is (Expl) come a boy
 'Yesterday a boy came.' (Vikner 1995: 185 (35h))
- b. *Gister het *(daar) in die hawe 'n skip aangekom.* [Afrikaans]
 yesterday has (Expl) in the harbour a ship arrived
 'Yesterday a ship arrived in the harbour.'

It is clear, then, that Spec-*vP* must be filled by an expletive in the absence of a (raised) argument in all of these languages, a fact which correlates with their relative morphological poverty. This follows if T probes for [D]/ ϕ in Spec-*vP* in both the morphologically impoverished spec-raisers (10b) and spec-piedpipers (10a,c) alike.

The situation is even more interesting in the absence of *any* argument (i.e. in the case of impersonal passives). Here, the behaviour of the spec-raisers departs subtly from that of the spec-piedpipers, a state of affairs which provides independent support for the symmetrical typology in (6). Specifically, the obligatorization of expletives with impersonal passives lags behind other expletive constructions in the spec-piedpiping (i.e. *vP*-raising) languages (both historically and synchronically), giving rise to a further case of semantically vacuous, 'true' optionality. Thus whilst expletives are obligatorily *absent* in head-piedpiping languages (11a,b) and obligatorily *present* in spec-raising languages (11c), they are, by contrast, only *optionally* present in spec-piedpiping languages (11d,e).

- (11) Impersonal passives
- a. *Ígær hefur *(það) verið dansað.* [Icelandic]
 yesterday has (Expl) become danced
 'Yesterday there was dancing.'
- b. *...daß (*es) getanzt wurde.* [German]
 that (Expl) danced became
 '... that there was dancing.'
- c. *...at *(der) er blevet danset.* [MSc (Danish)]
 that (Expl) has been danced
 '... that there was dancing.'

- d. *Blívur (tað) ofta arbeitt hart?* [Faroese]
 becomes (Expl) often worked hard
 (Vikner 1995: 150 (47))
- e. *...dat (daar) gedans word.* [Afrikaans]
 that (Expl) danced becomes
 ‘... that there is dancing.’

With our typology of EPP-satisfaction in place, we are now in a position to explain why one particular set of languages, those that instantiate the spec-piedpiping mode of EPP-satisfaction, is characterized by inherent, system-internal optionality of the kind that is normally taken to be excluded on economy grounds under minimalist assumptions, i.e. the semantically vacuous kind. The optionality of embedded clause V2-like orders seen in (3) and the optionality of expletive-insertion in (11d-e) both fall out for free since, as we show in the next section, each involves a computationally innocuous alternation between two independently available options for satisfying the same, obligatory feature – EPP(T). We therefore turn to a demonstration of the exact nature of these options and why it is specifically the spec-piedpipers that allow their full exploitation.

4. Spec-piedpiping and true optionality

In the following subsections, we consider first the expletive-related alternation mentioned in section 3 above and, thereafter, that relating to the word-order alternation in Afrikaans, first mentioned in section 1.

4.1 Impersonal passives in Dutch, Afrikaans and Faroese

As noted in the previous section, there are a number of Germanic languages which exhibit synchronic optionality in respect of the realization of expletives in impersonal passives. Faroese and Afrikaans have already been shown to be two of the languages which behave in this manner (cf. (11d-e)), and Dutch is another case in point, as (12) shows:

- (12) *...dat (er) gedanst wordt.*
 that (Expl) danced becomes
 ‘... that there is dancing.’

The explanandum that we now face is why Faroese, Afrikaans and Dutch, all three of which are morphologically (relatively) impoverished languages and thus spec-piedpipers, should permit optionality of this kind. In other words, how can T satisfy its morphological requirements when *tað/daar/er* is omitted in impersonal passives?

Our proposal is that impersonal passives can survive without an obligatory D-bearing expletive in Spec-vP because these structures always contain another category

bearing appropriate nominal features, namely the passive participle. According to Baker, Johnson & Roberts (1989), passive morphology (in their case, English *-ed/en*) expresses an absorbed argument. Assuming this to be true, passive participles will thus always be D-bearing elements, quite independently of the morphological richness of the language in question. It is therefore to be expected that even languages that have undergone extreme deflection will permit expletives to be optionally absent wherever T can satisfy its morphological requirements by probing a passive participle, precisely the state of affairs that we have observed here in connection with Faroese, Afrikaans and Dutch. That is, a spec-piedpiping language can permit structures in which Spec- ν P is not filled by an appropriate D-bearing XP on condition that an appropriate D-bearing category is present on the ν P-head. Essentially, therefore, these languages are *residually head-piedpiping* in the relevant contexts. In the specific case of impersonal passives, the featural make-up of passive participles facilitates this possibility.

The question that now arises, however, is why this possibility is only available to morphologically impoverished spec-piedpiping languages and why spec-raising languages do not permit this type of optionality (cf. the contrast between (11c) and (11d-e) above). The answer is that the (potential) availability of suitable D-features on the ν P-head is immaterial in spec-raising languages since the possibility of ν P-raising (i.e. piedpiping) simply does not exist for them: spec-raising grammars obligatorily require raising of the contents of Spec- ν P (i.e. they are effectively 'DP-raisers') and they do not sanction piedpiping (cf. (6); spec-raising grammars are crucially [-piedpiping]); therefore, what would otherwise be a potential goal on V/ ν (the D-features on the passive participle) cannot provide a category that can satisfy EPP(T) in the case of these languages.

Having accounted for the difference in the behaviour of spec-raising and spec-piedpiping languages, let us summarize our characterization of this first point of variation inherent to spec-piedpiping grammars as follows:

(13) *Spec-piedpiping optionality, mode 1: Optionality in the source dimension*

Spec-piedpiping is 'backwards compatible' with head-piedpiping in the absence of a suitable goal in Spec- ν P and the presence of one in the head of ν P: both options (viz. spec- and head-piedpiping) are available in principle – they are equivalent from the point of view of the grammar.

In our terms, therefore, impersonal passives in spec-piedpiping languages exhibit the optionality that they do by virtue of the fact that these ν P-raising languages can draw on their 'backwards compatibility' with the head-piedpiping mode of EPP-satisfaction and probe the V/ ν head when Spec- ν P is empty. In the following subsection, we show that spec-piedpiping grammars also entail a second type of optionality, namely what we will describe as 'forwards compatibility' with spec-raising.¹³

4.2 Apparent ‘embedded V2’ in Afrikaans

As noted in the introduction to this paper, Modern Spoken Afrikaans (MSA) permits optionality in embedded declaratives (*dat*-clauses; cf. (3) above). At first sight, the relevant optionality may appear to involve alternation between prescriptively correct V-final (i.e. embedded) ordering and matrix-like V2 ordering (cf. note 5), but there are a variety of considerations which militate against this analysis of the data (cf. Biberauer 2003). For our purposes, the most important of these is that it is only structures featuring an initial subject and an auxiliary of some description (temporal, passive or modal) in second position that may exhibit this word-order variation *without there being a difference in meaning*; wherever the first-position element is a non-subject and/or the second-position verb is not an auxiliary, the structure in question is necessarily interpreted differently from the corresponding V-final structure. Compare (14) and (15) in this connection.

- (14) a. *Ek weet dat sy dikwels Chopin gespeel het.*
I know that she often Chopin played has
- b. *Ek weet dat sy het dikwels Chopin gespeel.*
I know that she has often Chopin played
‘I know that she has often played Chopin.’
- c. *Hy vertel vir my dat dit die waarheid is.*
He tells for me that it the truth is
- d. *Hy vertel vir my dat dit is die waarheid.*
He tells for me that it is the truth
‘He tells me that it is the truth.’
- (15) a. *Ek weet dat sy dikwels Chopin speel.*
I know that she often Chopin plays
- b. *Ek weet dat sy speel dikwels Chopin.*
I know that she plays often Chopin
‘I know that she often plays Chopin.’
- c. *Hy vertel vir my dat dit die waarheid verdoesel.*
He tells for me that this the truth conceals
- d. *Hy vertel vir my dat dit verdoesel die waarheid.*
He tells for me that this conceals the truth
‘He tells me that this conceals the truth.’

Whereas the (a)/(b) and (c)/(d) pairs in (14) are interpretively equivalent in the absence of any special emphatic intonation, the same is not true of the corresponding pairs in (15): (15b,d) necessarily receive a *matrix-clause* intonation and interpretation and therefore cannot be interpreted as semantically (or pragmatically) equivalent to (15a,c). On the strength of this observation, Biberauer (2003) proposes that structures

such as those illustrated in (14b,d) – a structure-type that systematically alternates with the prescriptively correct V-final structure in MSA – are not in fact embedded V2 structures featuring the finite verb (Vf) in C (i.e. these are not instances of what Vikner (1995) designates *limited embedded V2*). Instead, it is argued that they should be analysed as TP-structures in which Vf is located in T and the initial subject occupies Spec-TP. In terms of the analysis we have been outlining here, this entails an analysis in terms of which MSA permits an alternation between the *vP*-raising (14a,c) and the spec-raising (14b,d) modes of EPP-satisfaction. In other words, the proposal is that MSA permits a second species of T-related ‘true optionality’: in addition to the expletive-related alternation already discussed above – an alternation which we ascribed to the backwards compatibility of spec-piedpiping with head-piedpiping – MSA also permits word-order optionality which instantiates a ‘forwards compatibility’ of spec-piedpiping with spec-raising.

Before we consider this analysis in more detail, let us firstly consider a relevant empirical fact, namely that the kind of ‘optional V2’ orders exhibited by MSA are entirely absent from German. Consider (16) in this regard:

- (16) *Ich weiß, daß er (*hat) oft Fußball gespielt (*hat).*
 I know that he (has) often football played (has)
 ‘I know that he has often played football.’

As (16) shows, the option of *not* piedpiping the whole *vP* along with the goal-bearing element (Vf in this case) is not available in German, which is a head-piedpiping language on our analysis. We submit that spec-raising is equally impossible in all languages with head-piedpiping grammars, on the grounds that the relevant [–piedpiping] mode of EPP-satisfaction (i.e. spec-raising) is only available as a licit derivational option to languages with spec-seeking grammars (as noted in subsection 4.1 above, it constitutes the *only* option in the case of languages with spec-raising grammars).

Why, then, should the [–piedpiping] mode of EPP-satisfaction be unavailable to head-piedpipers? Our proposal is that precisely the same considerations regulate the availability of optionality in this case as those which determine the possibility of optionality in respect of expletive realization, namely whether the two options are equivalent from the perspective of the grammar or not. Such equivalence, we have argued (section 2), will arise wherever two options are available for satisfying the same feature in the syntax. As we showed in connection with expletives in impersonal passives in the preceding subsection, the grammar of spec-piedpiping languages cannot mind whether EPP(T)-satisfaction is achieved via the spec-piedpiping mode of EPP-satisfaction or via the head-piedpiping mode: as this kind of grammar is not forced to raise the contents of Spec-*vP* in order to satisfy T’s EPP-requirement (as spec-raising grammars are), Spec-*vP* has the option of being empty, in which case T will simply ‘look elsewhere’ to locate the requisite D-bearing element and initiate piedpiping. Wherever appropriate D-features are available on a verbal head, the grammar

can then employ a *head*-piedpipng strategy to satisfy T's requirements, a state of affairs which, as we have shown above, obtains in the case of impersonal passives.

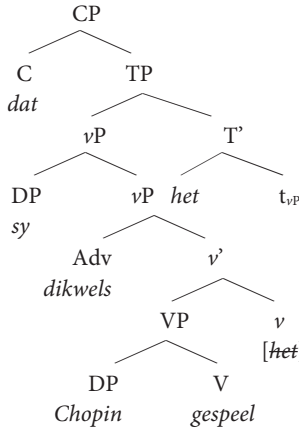
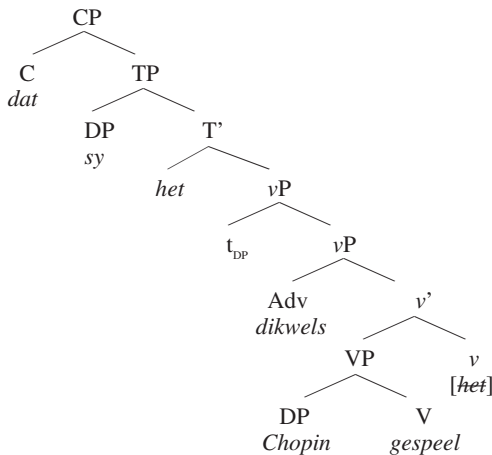
By the same token, we now propose that the discrepancy between the availability of the spec-raising mode of EPP-satisfaction in spec-piedpipng languages like MSA and its absence in head-piedpipng languages like German can also be accounted for by appealing to the consideration of equivalence from the perspective of the grammar. The [–piedpipng] option is *not* equivalent to the head-piedpipng option in these languages, for the simple reason that it cannot result in a well-formed structure. To see why this is so, consider Chomsky's (MP: 253) Chain Uniformity Condition:

(17) Chain Uniformity Condition

A chain is uniform with regard to phrase structure status

In terms of (17), only [+maximal] projections are able to raise to specifier (= nonprojecting) positions. In the case under consideration here, this implies that head-piedpipng languages like German, where the ϕ -set probed by T is located on Vf, cannot fail to piedpipe as failure to piedpipe the whole ν P to Spec-TP will result in a violation of Chain Uniformity (Vf being a minimal node). Vf cannot therefore raise independently to Spec-TP in languages of this type.¹⁴

By contrast, the fact that the ϕ -set probed by T in spec-piedpipng languages is located on the DP in Spec- ν P means that [–piedpipng] is an option for these languages. In this case, exclusive movement of the goal-bearing specifier material (DP) to Spec-TP will not result in a violation of Chain Uniformity: whether the DP raises independently or whether it piedpipes the entire category that immediately contains it (i.e. ν P) is immaterial from the perspective of the grammar since both options involve movement to Spec-TP of a [+maximal] category. Piedpipng is therefore not required in order to ensure convergence in this instance and we would thus expect that the [–piedpipng] option would be freely available to spec-piedpipng languages. In the MSA case, this expectation appears to be borne out as this language exhibits systematic, stable optionality in respect of the embedded structures outlined above. On our analysis, this restricted amount of stable optionality falls out as the product of a *single* underlying grammar, one that probes the DP in outer Spec- ν P, with Uniformity-sanctioned optionality in respect of the operation of piedpipng. For us, the structures associated with (14a, b) would therefore be (18a,b) respectively:

(18) a. The spec-piedpiping optionb. The spec-raising option

As these structures show, the superficially very different word orders in (14a,b) which nevertheless receive identical interpretations are, on the analysis proposed here, underlyingly very similar: the only difference is the manner in which EPP(T) is satisfied in the two cases, with *vP*-raising (i.e. spec-piedpiping) of a kind that is superficially very similar to that which takes place in German (cf. (8) above) delivering the prescriptively correct V-final structure in (14a), and DP-raising (i.e. spec-raising) resulting in the superficially V2-like TP-structure in (14b). Since the *vP*- and DP-raising operations both serve the same purpose, namely to satisfy EPP(T), and since this EPP-feature is an obligatory one which must be satisfied by an appropriate element in the course of the derivation, the two structures need not differ interpretively (cf. section 2 above):

the computational system does not mind which of the two options is employed since they are both legitimate options which are computationally equivalent – LR and FI have no way to tell them apart and thus cannot choose between them.

Furthermore, since there are a great many prescriptively correct structures that are superficially amenable to analysis as spec-raising structures (cf. structures containing unmodified unaccusative verbs, unmodified passives, verbs taking clausal complements, etc., none of which feature ν P-internal material over and above what is located in Spec- ν P, making spec-piedpiping and spec-raising indistinguishable), there is also no grammar-external reason for speakers to reject the spec-raising possibility as a potential alternative to the prescriptively correct spec-piedpiping one (contrast the German situation described above, note 14). In terms of our proposal, the prescriptively sanctioned spec-piedpiping option merely represents one of two syntactically equivalent alternatives available to the computational system in languages of the kind we have designated ‘spec-piedpiping’: spec-raising will always deliver the same computational result as spec-piedpiping and we interpret the fact that native speakers automatically and systematically produce structures of the type in (14b,d) in contexts where matrix-style interpretations are inappropriate (and consequently also not postulated by hearers) as evidence in favour of the idea that these structures represent the output of a single grammar (and, moreover, a single numeration) which permits both options.

The relevant point of variation, the second mode of optionality characterizing spec-piedpiping grammars, can now be stated as in (19).

- (19) *Spec-piedpiping optionality, mode 2: Optionality in the size dimension*
Spec-piedpiping is ‘*forwards compatible*’ with *spec-raising*: both options are available in principle – they are equivalent from the point of view of the grammar (Chain Uniformity).

To summarize this section: we have considered two superficially very different types of ‘true optionality’ in Germanic and shown that the relevant alternations can be accounted for by appealing to the idea that a certain type of grammar – specifically, the *spec-piedpiping* type – is inherently amenable to limited amounts of system-internal optionality. Specifically, we have proposed that the satisfaction of the obligatory EPP-feature associated with T is subject to optionality along two dimensions in spec-piedpiping languages:

- (a) optionality for *source*, where either the head or specifier can supply the required D-features (cf. the impersonal passive case); and
- (b) optionality for *size* ([+/- piedpiping]), where either ν P- or DP-raising can take place consequent to Agree(T, D/ ϕ) (cf. the embedded-clause word-order alternation case).

Since either option in these two cases will result in T’s morphological needs being satisfied and thus in the satisfaction of an obligatory EPP-feature, the specific choice

that is made will not have any interpretive consequences, resulting in the 'true optionality' effects which are the central concern of this paper. The different choices deliver different PFs, but identical LFs, from a *single* numeration.

The cases that we have examined here (apparent verb-movement in Afrikaans embedded clauses and optional expletives in impersonal passives) strongly suggest that the grammar does in fact make use of the syntactic indeterminacies left open by LR and FI for the satisfaction of obligatory EPP-features (as claimed in section 2). In the next section, we consider three further empirical cases of 'true optionality' in support of this conclusion.

5. Further instances of 'true optionality' with spec-piedpiping

5.1 Wh-interrogatives in Modern Spoken Afrikaans

In addition to the alternating structures considered in section 4.2, MSA also features a second alternation pattern involving two structures that superficially look very similar to those which we have already considered. Consider (20–21) in this connection:

- (20) a. *Ek weet wat die studente gister gedoen het.*
I know what the students yesterday done have
- b. *Ek weet wat het die studente gister gedoen.*
I know what have the students yesterday done
'I know what the students did yesterday.'
- (21) a. *Ek wonder wat hy nou doen.*
I wonder what he now do
- b. *Ek wonder wat doen hy nou.*
I wonder what do he now
'I wonder what he is doing now.'

As was the case for the structures in (3)/(14), those illustrated in (20–21) appear to involve alternation between a V-final form which is prescriptively sanctioned and a V2 form which is not, but which nevertheless surfaces with great frequency in MSA (cf. Biberauer 2003). In the declarative case, we argued that the non-V-final structures should not, in fact, be analysed as V2 structures, but the same argumentation does not carry over to the *wh*-interrogative structures with which we are concerned here: as shown in (20–21), the restrictions that were seen to apply to the declarative clauses discussed in section 4.1 do not apply in the case of the *wh*-interrogatives at issue here (both subjects and nonsubjects may surface clause-initially and the nature of the second position verb is likewise not subject to any restrictions); therefore it would seem reasonable to analyse these clauses as genuine V-in-C clauses, i.e. as CPs. One characteristic that is, however, shared by the 'verb-early' declarative structures considered in section 4.2 and the interrogatives in (20–21) is the fact that they are

interpretively equivalent to the V-final structures with which they systematically alternate. Despite superficial appearances to the contrary, the (b) structures in (20–21) therefore constitute indirect questions (i.e. embedded clauses).¹⁵ As was the case with the *dat*-clauses, it is, of course, possible for the superficially matrix-like structures in (20–21) to receive a matrix interpretation, but this interpretation is crucially contingent upon the presence of an appropriate intonational indicator (e.g. a break following the matrix verb); in the absence of an indicator of this kind, the V2 clauses in (20b)/(21b) are interpretively equivalent to their V-final counterparts in (20a)/(21a). We are therefore dealing with another instance of semantically vacuous optionality in Afrikaans here.¹⁶

In keeping with the analysis we proposed for the semantically vacuous alternation between superficially V2 and V-final *dat*-clauses in section 4.2, we propose that the *wh*-clauses in (20–21) can likewise be analysed as the output of a single numeration. More specifically, we propose that the embedded C initiates an Agree operation that probes for a *wh*-operator (cf. MI: 128). Following Chomsky (DbP: 35), we assume that this *wh*-element undergoes successive-cyclic EPP-driven movement to Spec-CP via the edge of ν P; ν P-raising to Spec-TP (i.e. spec-piedpiping) then places the *wh*-goal inside Spec-TP prior to merger of C. This head, which, like T, is associated with an obligatory EPP-feature, thus probes the specifier of ν P. Since embedded clauses are distinctively V-final in standard Afrikaans, as in other SOV Germanic languages, it is clear that the embedded C-probe must in general employ a piedpiping strategy in order to satisfy its EPP-requirement. Since the goal is an XP located in Spec- ν P, the piedpiping strategy in question is, once again, that of spec-piedpiping. In accordance with (17) and (19) above, we therefore predict that C, just like T, will have the choice of either raising just the XP located in Spec- ν P (i.e. spec-raising), thereby delivering the V2-structures, or of piedpiping the ν P containing the goal (i.e. spec-piedpiping), thereby delivering the V-final structures. As shown in (20–21), this is indeed borne out.

A question that now arises is why the optionality exhibited in embedded *wh*-contexts is not replicated in matrix clauses, i.e. why don't we see V2 and V-final ordering alternating in matrix contexts?¹⁷ The possibility of raising TP to Spec-CP would then yield V-final *qua* V2 orders in matrix clauses, and thus erroneously predict unattested V-final matrix interrogatives such as (22).

- (22) **Wat hy by die kantoor gedoen het?* [Afrikaans]
 What he at the office done has

The solution to this problem will presumably be the same as whatever it is that in general rules out TP from the pre-V2 position (i.e., there is a general restriction across all V2 clause types in Germanic such that the pre-V2 XP may be any XP except TP; cf. Wurmbrand 2004 for discussion):

- (23) **[Der student das Buch nicht gelesen] hat t_{TP}* [German]
 The student the book not read has

We have no further insights to offer on this matter (though see M. Richards 2004 for a possible analysis, not compatible with our present claims). Nevertheless, it should be noted that the V2/V-final alternations in matrix interrogatives predicted by our analysis of (20–21) are not entirely unsupported empirically. Like the structures in (20–21), exclamatives involve a [+wh] C-probe, and here we do indeed find free alternation between V2 and V-final orders in a matrix context:

- (24) a. *Wie riesig sind diese Pflanzen!* [German]
How enormous are these plants
- b. *Wie riesig diese Pflanzen sind!*¹⁸
How enormous these plants are
'How enormous these plants are!'

The examples in (24) are particularly telling as they represent two alternative means by which exclamatives can be expressed in German (and, indeed, other Germanic languages) without there being any difference in meaning, i.e. this is another instance of true, semantically vacuous optionality. Since exclamatives are generally regarded as an exclusively matrix phenomenon *par excellence* (cf. i.a. Zanuttini & Portner 2003), examples of this type would seem to vindicate our analysis: 'V-final *qua* V2' is in fact possible in matrix contexts with the relevant type of C-probe.

Lending similar support to our proposal that the embedded *wh*-alternation in MSA involves optional clausal spec-piedpiping is the existence of languages which, like Afrikaans, permit semantically vacuous alternation between *wh*-fronting and so-called *wh-clausal piedpiping* (cf. Nishigauchi 1990, N. Richards 1997: 166ff and Simpson & Bhattacharya 2000, 2003). Basque and various varieties of Quechua have been argued to be languages of this type (cf. de Urbina 1990 and Hermon 1984 respectively), as have Bangla and Marathi (cf. Simpson & Bhattacharya 2000, 2003) and also Kashmiri (cf. Bhatt 1999). The following Bangla and Imbabura Quechua examples illustrate.

- (25) a. *tumi [ke] bhab-cho* [_{CP} *ke baRI kor-be*]. [Bangla]
you who think-2 house make-FUT-3
- b. *tumi* [_{CP} *ke baRI kor-be*] *bhab-cho* [_{CP} *ke baRI kor-be*].
you who house make-FUT-3 think-2
'Who do you think will build the house?'
(Simpson & Bhattacharya 2000: 5 (15), (17))
- (26) a. *ima-ta-tak Maria-ka [Juzi miku-shka-ta] kri-n?* [Imbabura Quechua]
what-ACC-WH Maria-TOP José eat-NL-ACC believe-AGR
what-ACC WH Maria-TOP José eat-NL-ACC WH Maria-TOP believe-AGR
- b. [*ima-ta Juzi miku-shka-ta-tak*] *Maria-ka kri-n?*
what-ACC Juzi eat-NL-ACC-WH Maria-TOP believe-AGR
'What does Maria believe that José ate?'
(Hermon 1984: 146)

These examples suggest that piedpiping versus non-piedpiping options of the kind that our analysis of Afrikaans embedded *wh*-clauses entails are options that grammars do actually employ more widely. Thus, in the (a) examples, the *wh*-element alone (*ke / ima-ta*) undergoes *wh*-movement, whereas in the (b) examples it is the entire clause whose specifier is occupied by the *wh*-element that undergoes *wh*-movement.

5.2 Wh-movement in languages permitting Left Branch Condition (LBC) violations

Another phenomenon that would seem to point to grammars actually exploiting an inherent syntactic indeterminacy surfaces in languages such as Russian, which, unlike English (27), famously allow apparent LBC violations of the form in (28).

(27) a. *Whose book did you read?*

b. **Whose did you read book?*

(28) a. Č'ju knigu ty čital?
Whose book you read

b. Č'ju ty čital knigu?
Whose you read book
'Whose book did you read?'

As is well known, movement of the *wh*-element from the left branch (specifier) of the *wh*-DP *whose book* in (27) to Spec-CP requires the whole DP to be piedpiped along in English (a classical example of piedpiping, and apparently one of 'spec-piedpiping' in the terms proposed above), a constraint that is inoperative in Russian (28). Thus (28b), the non-piedpiped counterpart of (28a), is perfectly fine. Crucial for our present purposes, however, is the less frequently mentioned fact that such LBC-violations are not obligatory in Russian: as (28a) shows, piedpiping of the entire *wh*-phrase to Spec-CP is also a legitimate derivational option, delivering a fully grammatical *wh*-interrogative that is, moreover, semantically equivalent to its non-piedpiping counterpart. (28a-b) therefore once again represent structures that are interpretively equivalent despite the fact that their derivational history cannot be the same. As (27) shows, the same semantically vacuous alternation is unavailable in English. Why should this be?

Let us consider the nature of the structures underlying the sentences in (27–28), starting with the English case. Firstly, we assume that *wh*-elements such as *what* and *which* are *wh*-determiners: following Abney's (1987) analysis of the demonstratives *this* and *that* as D-heads, it is reasonable to assume that their *wh*-counterparts are similarly the heads of their respective (*wh*-)DPs. As such, the familiar Chain Uniformity considerations (cf. (17)) now immediately exclude the possibility of raising such a lexical item to Spec-CP independently of the maximal projection that it heads (cf. also Radford 1997: 276ff.):¹⁹

- (29) a. D^{\max}
 D^{\min} N^{\max}
which *book* $-x \rightarrow$
- b. C^{\max}
 D^{\max} ...
which

Piedpiping of *wh*-DPs in English is therefore, in fact, a case of *head*-piedpiping (not spec-piedpiping); like head-piedpiping for satisfaction of T's EPP in German, it is therefore also obligatory (cf. section 4). LBC thus reduces to head-piedpiping under (17), which in turn accounts for the absence of the kind of semantically vacuous alternation that we would expect if *wh*-raising involved spec-piedpiping – i.e. exactly the kind of alternation that we *do* observe for Russian (cf. (27)). In terms of our analysis, then, Russian must differ from English in being a genuine spec-piedpiper in the domain of *wh*-raising. This in turn implies that Russian *wh*-DPs cannot have the structure in (29); instead, Russian *wh*-elements such as *kakoj* ('what', 'which'), *kotoryj* ('which', 'what') and *čej* ('whose') must occupy the specifier of their respective *wh*-DPs, along the lines suggested in (30). As such, they have the status of maximal projections and are thus able to raise independently to Spec-CP without incurring a uniformity violation (cf. (30b)). LBC-violating *wh*-structures are consequently freely available in Russian.²⁰

- (30) a. D^{\max}
 Q^{\max} (D)
č'ju D^{\min} N^{\max}
 \emptyset *knigu* \rightarrow
- b. C^{\max}
 Q^{\max} ...
č'ju

Thus our spec-piedpiping analysis, with its inherent optionality, is immediately able to explain why anti-LBC structures like (28b) are both optional and semantically equivalent to their LBC-respecting counterparts. As soon as Russian is recognized as a spec-piedpiper for the purposes of *wh*-raising, we expect that it should exhibit alternation between spec-piedpiping (raising of the entire *wh*-DP) and spec-raising (raising of the *wh*-element (QP) independently of its containing DP): as argued in section 4.2, Chain Uniformity sanctions principled and systematic optionality in spec-piedpiping systems. Furthermore, since these alternating XP-raising strategies serve to satisfy an obligatory EPP-feature – that associated with interrogative C – we also expect to find that the piedpiping and non-piedpiping structures that are ultimately derived are interpretively equivalent. Both predictions are borne out.

The above analysis can, moreover, be readily extended to provide a simple account of diachronic changes that have affected the structure of Greek *wh*-interrogatives. Consider the Classical and Modern Greek examples in (31–32).

- (31) a. *Tina dynamin echei?* [Classical Greek]
 What-ACC-FEM-S power-ACC-FEM-S have-3S
 (Plato *Laws* 643a; Mathieu & Sitaridou (2005): 237, (1a))
- b. *Tina echei dynamin?*
 What-ACC-FEM-S have-3S power-ACC-FEM-S
 (Plato *Republic* 358b; Mathieu & Sitaridou (2005): 237, (1b))
- (32) a. *Ti dinami exi?* [Modern Greek]
 Which-ACC-FEM-S power-ACC-FEM-S have-3S
- b. **Ti exi dinami?*
 What-ACC-FEM-S have-3S power-ACC-FEM-S
 (Mathieu & Sitaridou (2005): 238, (2))

As (31) shows, Classical Greek permitted LBC-violating *wh*-interrogatives like (31b) to occur alongside LBC-respecting structures like (31a). This alternation is, however, no longer possible in Modern Greek, as the ungrammaticality of (32b) shows. Mathieu & Sitaridou (2005: 2) argue that *wh*-words and indefinites had the same morphological make-up in Classical Greek, with *tis* meaning both ‘who/what’ (i.e. ‘which person’/‘which thing’) and ‘some x’ or ‘any x’ (cf. also Roberts & Roussou 2003: 161–167). In other words, we can think of Classical Greek *wh*-words as QPs. As such, they can be viewed in the same way as Russian *wh*-elements, i.e. as items that occupy the specifier of DP and can therefore undergo either spec-piedpiping (cf. (31a)) or spec-raising (cf. (31b)) in order to satisfy interrogative C’s EPP-feature. By contrast, Mathieu & Sitaridou (2005: 14ff) observe that Modern Greek *ti* is unambiguously a determiner, i.e. a D-head comparable to English *wh*-determiners like *which*. It is therefore subject to the same restrictions as English *which*, namely that it must obligatorily piedpipe the DP that it heads, with independent raising of *ti* resulting in a violation of Chain Uniformity. Structures like (32b) are thus straightforwardly excluded. Changes in the Greek D-system have therefore resulted in changes in the availability of semantically vacuous alternations. More specifically, the fact that the category probed by interrogative C underwent reanalysis to become a D-head entails that structures that were previously generated via spec-piedpiping were reanalysed as head-piedpiping structures, with a concomitant loss in the availability of the ‘split’ LBC-violating structures that featured in Classical Greek.

What this subsection has shown, therefore, is that morphological and lexical considerations appear to interact with syntactic ones in determining whether LBC-violating structures are available alongside LBC-respecting ones (see also Boeckx 2003: 39ff.). In the next subsection, we will consider another, unrelated case which illustrates the same point.

5.3 Quantifier stranding in Arabic

Benmamoun (1999) discusses the phenomenon of quantifier stranding in Arabic and records the following patterns in Standard Arabic:

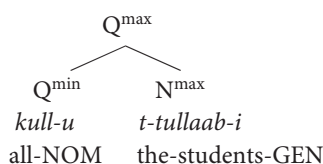
- (33) a. *kull-u t-tullaab-i žaa?-uu.*
all-NOM the-students-GEN come-PAST-3MP
'All the students came.'
(Benmamoun 1999: 623, (4a))
- b. **t-tullaab-i žaa?-uu kull-u.*
the-students-GEN come-PAST-3MP all-NOM
- (34) a. *t-tullaab-u kull-u-hum žaa?-uu.*
the-students-NOM all-NOM-them come-PAST-3MP
'All the students came.'
(Benmamoun 1999: 626, (11a))
- b. *t-tullaab-u kaan-uu kull-u-hum ya-drus-uun.*
the-students-NOM be-PAST-3MP all-NOM-them 3-study-MP
'The students were all studying.'
(Benmamoun 1999: 627, (14a))

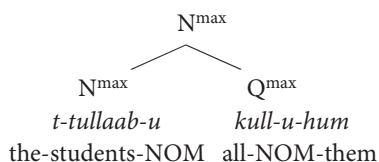
As comparison of (33) and (34) shows, quantifiers in Arabic appear to surface in two different types of structures, one in which they agree with the subject they modify and cooccur with a resumptive pronoun (cf. (34)) and one in which they fail to agree (cf. (33)). Crucially, the two morphologically distinct quantificational structures permit very different stranding possibilities: the non-agreeing quantifier cannot be stranded, as shown in (33b), while the agreeing quantifier can. Benmamoun (1999: 636) accounts for the discrepancy in stranding possibilities by postulating two different underlying structures for the examples in question. Specifically, he proposes that Standard Arabic quantifier-containing structures are of two types:

- (35) a. a construct-state-like Q-NP type in which Q heads a QP; and
b. an NP-Q type in which Q heads an adjunct that modifies the NP.

The two structures can be schematically represented as in (36).

- (36) a. Construct-state-like Q-NP type (Q = head of argumental QP)



b. NP-Q type containing QP-adjunct (Q = head of NP-adjoined QP)

For our purposes, the crucial observation that Benmamoun makes in connection with the structures illustrated in (36a-b) is that they behave differently in respect of Q-float: Q-float is impossible where the quantifier constitutes the head of a non-adjoined QP (cf. the structure in (36a) and the examples in (33)) whereas it is available as an option where the QP is adjoined to the NP that it modifies (cf. the structure in (36b) and the examples in (34)). In our terms, this discrepancy is as expected since Q-float is impossible precisely where Q heads the phrase that moves to the higher specifier position (cf. (33)/(36a)). In other words, this is another case of head-piedpiping correlating with a lack of optionality. In the case of (34)/(36b), by contrast, Chain Uniformity allows NP either to raise alone (giving rise to Q-float, cf. (34b)) or to piedpipe the entire adjunction structure (cf. (34a)). This point of optionality is thus analogous to that which is generally available in spec-piedpiping contexts: because the two options are formally identical from the point of view of the grammar, either can be employed; because the grammar doesn't mind, a single numeration can give rise to two different PFs containing the same lexical items, i.e. (34a/b).

6. Conclusions

Our central concern in this paper has been to argue that limited amounts of system-internal, 'true' optionality are in fact admitted on principled grounds in the minimalist system of DbP. Such optionality arises from how a given EPP-feature is formally satisfied rather than from how it is functionally motivated. This is because the minimalist economy principles LR and FI only serve to exclude optionality in the latter respect (i.e. in the motivation of movement-triggers (EPP-features) via functional pay-off at the interface); they have nothing to say about optionality in the former domain, thus yielding the possibility for free variation in respect of the operation which the syntax actually deploys to satisfy these movement triggers. Our analysis thus provides a principled explanation of when alternative structures will not be associated with distinct interpretations, i.e. when 'true optionality' will occur: on our account, the semantic vacuity of true optionality follows from the fact that both available options satisfy the same EPP-feature. In the case of an obligatory EPP-feature, such as in the two case studies offered in section 4, neither movement operation will yield a new interpretation at LF. Such features do not need to be licensed through 'extra interpretive effects'

at the interface – they are obligatorily present and therefore necessarily require satisfaction by whatever means the grammar allows. If alternative strategies are available in the case of a given numeration, then ‘true optionality’ is the result.

Ultimately, we hope to have shown that free variation is a natural part of stable and individual grammars. That is, at least some kinds of true optionality can be accommodated within a single grammatical system. Our system-internal approach to optionality therefore has no recourse to the conceptually dubious notion of competing grammars, avoiding the kind of ‘brute force’ explanations that would simply replace optional operations with optional grammars; it further requires no weakening of the feature-driven theory of movement (such as allowing certain amounts of non-feature-driven movement in violation of LR). On our analysis, optionality is simply what results when the grammar doesn't mind, a scenario that obtains whenever LR and FI underdetermine a derivation (or, more specifically, the applicability of derivational options for the satisfaction of a given formal imperative). Moreover, this form of optionality in movement operations is only to be expected and is an entirely natural part of the system once Move is reconceived as (internally-applied) Merge (cf. BEA). Thus, just as it is wholly trivial and unremarkable that we find optionality for the satisfaction of θ -selectional features via choices in *external* merge (e.g. *John likes Mary* vs. *Mary likes John*; cf. note 4), so it should be equally trivial and unremarkable if we find optionality for the satisfaction of nonthematic selectional features (i.e. EPP-features) via choices in *internal* merge – it is exactly the same derivational indeterminacy that is exploited in both cases. Optionality, like movement itself, is thus not an imperfection of C_{HL} but is actually what we predict to find – indeed, it would have to be stipulated *not* to exist (cf. Chomsky 2005 on Move *qua* internal merge). It is the *absence* of optionality, at least of the kind that we have characterized in this paper, that would be the imperfection.

Notes

* Earlier versions of this material were presented in June 2004 at the Workshop on Faroese at the University of Iceland, Reykjavik, and at the Minimalist Theorizing workshop at the University of Indiana, Bloomington. We would like to thank the audiences for their helpful comments and feedback. The research reported in this paper was supported by an Arts and Humanities Research Board postgraduate award (Richards) and by AHRC project grant AR14458 (Biberauer).

1. In the following, MP = Chomsky 1995, MI = Chomsky 2000, DbP = Chomsky 2001, BEA = Chomsky 2004.
2. LR and FI thus roughly subsume the principles of derivational and representational economy, respectively.
3. Saying that an operation obligatorily results in a particular kind of interpretation is not, of course, the same as saying that the operation itself is obligatory. Rather, an inherent obligatoriness (of interpretation) is actually the very hallmark of an optional operation (a point that has been

persuasively made by Miyagawa (1997, 2003), Bailyn (2001, 2003), Koenenman & Neeleman (2001) and Thráinsson (2003) in addition to the authors cited in the main text. In section 2 we argue that the correlation holds in the opposite direction too, i.e. an obligatory operation is characterized by an inherent *optionality* (of interpretation). Further, as Reinhart makes clear, a marked operation does not imply a marked interpretation. In a context where the marked operation (and its associated interpretation) is the most felicitous one, then only the ‘marked’ derivation will do – i.e. *failure* to apply the optional (‘marked’) rule would be marked, resulting in deviance/unacceptability. Thus the fact that an unscrambled definite DP is deviant in German is simply down to the general incompatibility of definites with (wide/informational) focus (cf. *?Er hat nicht das Buch gelesen*, ‘He did not read the book’), requiring a relatively inaccessible contrastive context in order to be felicitous. The movement in (1b) is not syntactically obligatory in any reasonable sense, or else (1a) would be ungrammatical (violate FI).

4. Of course, this is not entirely true, since presumably both *John likes Mary* and *Mary likes John* share a single numeration given the undifferentiated Case features on lexical items under the Probe-Goal-Agree system. It might therefore seem necessary to follow Reinhart and Fox in invoking the additional, complex notion of ‘reference set’ (consisting of pairs of numerations and interpretations) as the determiner of a unique output. This would be unfortunate from the current minimalist perspective, in which comparative, transderivational economy has been replaced by local determination. In order to attain deterministic numerations, then, we need some principled way of excluding alternations in *external* merge from the purview of LR/FI/(2). In other words, ‘effect on output’, where LF is concerned, must exclude base relations (thematic, c-/s-selectional, argument structure) and include only logical and discourse relations (scope, old/new, specific/nonspecific, etc.), i.e. what Chomsky (2005) dubs “edge” semantics. The relevant notion, we suggest, is obligatoriness – numerations define unique outputs only for the satisfaction of optional features; obligatory features (such as θ -roles) may be satisfied in whatever way and by whatever item the derivational machinery sees fit, yielding an inherent optionality for these cases. This is because LR and FI, our only possible economy principles from the strongest minimalist standpoint (cf. above), have nothing to say about these cases and thus leave them undetermined. As we show in section 2, this, in turn, will allow even certain movement operations to apply entirely optionally (i.e. vacuously at LF) on the basis of a single numeration.

5. These alternations obtain in bridge contexts and are also acceptable in non-bridge contexts, thus rendering an analysis in terms of limited embedded V2 (cf. Vikner 1995) implausible. Further arguments against such a V-in-C analysis of (3b) are given in section 4.2 below (see also Biberauer 2003).

Thráinsson (2003) gives a competing-grammars analysis (cf. Kroch 1989) of similar semantically vacuous alternations in verb placement in Faroese. We have argued against competing grammars in other work (Richards & Biberauer 2004; see also Koopman & van der Wurff 2000). Since our contention is that free variation (i.e. true optionality) can be the output of a single, stable grammar and thus need not imply distinct numerations (let alone distinct grammars), we shall set such analyses aside here.

6. Bobaljik assumes that the relevant two-membered A-chain is syntactically created in both (4a) and (4b) alike (his single-cycle analysis effectively replaces associate-raising at LF with expletive-insertion at PF). He thus does not adopt the Agree mechanism of MI/DbP/BEA according to which only a single copy of *someone* would exist in (4b).

7. In terms of the above, F is present for free where F = obligatory EPP, and so any licit

operational option Ω , Ω' , ... for satisfying F is equally costly (i.e. our economy principles LR and FI do not care), resulting in free alternations for internal merge. We thus have a neat parallel with the free alternations for *external* merge mentioned in note 4 (*John likes Mary/Mary likes John*, etc.). In both the internal-merge and the external-merge cases, indeterminacy arises where selector features are obligatory and all options thus equally costly (EPP simply being the nonthematic selector feature; thematic selector features, i.e. ' θ -roles', may also be assumed to be obligatorily associated to the relevant (lexical) heads in the lexicon).

8. To be clear, then, it is not the obligatoriness *per se* of an EPP-feature that gives rise to semantically vacuous alternations; rather, vacuous optionality is simply the result of two (or more) operations satisfying the *same* EPP-feature. Thus, as long as it is motivated at the interface in the usual manner, an optional EPP-feature may equally give rise to vacuous alternations wherever multiple options for its satisfaction are available. Where the two types of feature differ will simply be in how their respective sets of alternants are interpreted *as a whole*. That is, in the case of an obligatory EPP-feature, the options for its satisfaction will all receive an 'unmarked' interpretation; in the case of an optional EPP-feature, the options for its satisfaction will all be interpreted as 'marked' (i.e. with respect to the unmarked, non-move, EPP-less derivation/numeration). We leave the discovery of examples of this latter kind to future research, confining ourselves here to structures involving obligatory EPP.

9. This would appear to violate the supposed ban on comp-to-spec raising, cf. Pesetsky & Torrego 2001, 2004, Abels 2003, Collins 2003, Kayne 2004, Bošković 2005 and others. Such a constraint, if it exists, has to be shown to follow from deeper principles – there is no primitive, *a priori* comp-to-spec constraint from a minimalist perspective. Whilst several of these authors do indeed attempt to derive this constraint, it is clear that, on the minimal assumptions adopted here, nothing other than stipulation can actually rule out comp-to-spec insofar as the latter piggybacks on a licit Agree relation between a head and the head of its complement, as is the case with ν P-raising for EPP-satisfaction.

10. This does not commit us to the view that the agreement morpheme is referential, i.e. bears the θ -role of the logical subject. Expletive *it*, for example, is standardly ascribed an interpretable ϕ -set (controlling third-person singular agreement) despite its nonreferential status. Rich agreement, then, may simply be a kind of synthetic expletive.

11. Note that we use the term 'last-resort' here only in an informal sense – insertion of Expl is not 'expensive' in any LR-violating sense since expletive-containing and expletive-less derivations are not in competition (they are the product of separate numerations, cf. section 2). (9) can simply be seen as a rationale for why such empty, dummy elements should exist at all in a minimalist grammar. Our discussion of (4a/b) in section 2 provides another such rationale. Obligatory EPP yields LF-ambiguity (optionality); Expl then emerges simply as a disambiguation strategy for forcing the narrow scope ('non-move') reading of the associate DP. (Since FI forces the wide-scope ('moved') reading with *optional* EPP, a strategy to force the moved reading with obligatory EPP is not computationally viable from the minimalist perspective, hence only the opposite strategy can be deployed, *viz.* Expl.)

12. Richards & Biberauer (2004) argue that the variation associated with the Faroese 'dialect split' of Jonas 1996, analysed in terms of competing grammars in Thráinsson 2003 (cf. note 5), is the product of a single grammar (cf. section 4.1 below); hence our use of the neutral term 'Modern Faroese'.

13. Our use of *forwards/backwards* is motivated by diachronic/chronological considerations, reflecting the fact that languages tend, under the appropriate circumstances, to shift from

head-piedpiping, to spec-piedpiping, to spec-raising for the purposes of satisfying T's EPP (cf. Richards & Biberauer 2005 for more detailed discussion of the considerations underlying this typical series of developments).

14. In addition to the theoretical consideration (Chain Uniformity) that rules out the possibility of the [–piedpiping] option for EPP-satisfaction in head-piedpipers like German, we further submit that acquisitional considerations militate against the implementation of this option (i.e. Greek-style raising to T instead of to Spec-TP). It is reasonable to assume that the grammars postulated by speakers will not be such that they generate structures with surface orders that diverge markedly from the initial input. Thus, if German speakers were, for example, to employ V-to-T raising in order to satisfy T's EPP-feature – an option which is, in principle, available since German is arguably inflectionally rich enough to license A&A-style EPP-satisfaction – VO structures of a kind that consistently fail to occur in embedded contexts in German would result. This non-attestation consideration, combined with the more general observation that word-order variation and change appear to arise when speakers postulate a new/alternative underlying structure that, crucially, delivers superficially *identical* or at least very *similar* structures to those produced by an existing underlying structure (cf. Lightfoot 1991), suggests that input considerations restrict the operations that learners will postulate in any given situation. The theoretical possibility in terms of which an inflectionally rich language could be amenable to alternation between the head-raising and head-piedpiping modes of EPP-satisfaction therefore fails to arise in practice in the case of German and OV languages more generally.

We would, however, like to note that the same is not necessarily true for VO head-piedpipers like Icelandic. It is a well-documented fact that Icelandic exhibits V1 structures and, additionally, also features V-to-T movement in non-V2 and non-finite embedded clauses. It may therefore be the case that Icelandic represents a head-seeker which permits optionality in the size dimension (i.e., forwards compatibility; cf. (19) below). We leave this possibility for further research.

15. McCloskey (1992, 2004) and Henry (1995) discuss a very similar phenomenon in various varieties of Hiberno-English, making it very clear that the apparently V2 structures that occur in embedded interrogative contexts in these varieties are genuine embedded clauses which, despite their surface ordering, also receive a non-matrix interpretation. It should, however, be noted that the V2/V-final alternation in Hiberno-English is restricted to the class of *wonder* (i.e. question-taking) predicates, whereas the corresponding alternation in MSA is not subject to this restriction (cf. Biberauer 2003). We presently have nothing to say about this discrepancy.

16. Schönenberger (2001:17) cites examples such as (i) below which indicate that the same optionality appears to be available in Swiss German:

(i) *Weisch wenn hät de Samir Geburtstag – am 1. Januar*

Know-2S when has the Samir birthday on 1 January

Interestingly, Schönenberger (2001:156) also notes that Swiss German children appear to favour the V2 ordering almost to the exclusion of the V-final alternative until approximately the age of 5.

17. Thanks to Dorian Roehrs for bringing this question to our attention.

18. This example is cited in Schwartz & Vikner (1996:27).

19. Our reversion to the relational diacritics 'min' and 'max' in the trees in the remainder of this section is purely for expository purposes, since concerns of Chain Uniformity are at the forefront here.

20. The structure in (30), with *wh*-specifiers (perhaps QPs) instead of *wh*-determiners, is additionally supported by the fact that Russian lacks overt articles in general, hence null D-heads are independently motivated in the language (cf. Progovac 1998 on Serbo-Croatian).

References

- Abels, K. 2003. Successive Cyclicity, Anti-locality, and Adposition Stranding. PhD dissertation, University of Connecticut.
- Abney, S. 1987. The English Noun Phrase in its Sentential Aspect. PhD dissertation, MIT.
- Alexiadou, A. and E. Anagnostopoulou. 1998. Parametrizing Agr: Word order, V-movement and EPP-checking. *Natural Language and Linguistic Theory* 16:491–539.
- Bailyn, J. F. 2001. On scrambling: A reply to Bošković and Takahashi. *Linguistic Inquiry* 32:635–658.
- Bailyn, J. F. 2003. Does Russian scrambling exist? In *Word Order and Scrambling*, S. Karimi (ed.), 156–176. Oxford: Blackwell.
- Baker, M., K. Johnson, and I. Roberts. 1989. Passive arguments raised. *Linguistic Inquiry* 20:219–251.
- Benmamoun, E. 1999. The syntax of quantifiers and quantifier float. *Linguistic Inquiry* 30:621–642.
- Bhatt, R. 1999. *Verb Movement and the Syntax of Kashmiri*. Dordrecht: Kluwer.
- Biberauer, T. 2003. Verb Second (V2) in Afrikaans: A minimalist investigation of word order variation. PhD dissertation, University of Cambridge.
- Bobaljik, J. 2002. A-chains at the PF-interface: Copies and 'covert' movement. *Natural Language and Linguistic Theory* 20:197–267.
- Bobaljik, J. and H. Thráinsson. 1998. Two heads aren't always better than one. *Syntax* 1:37–71.
- Boeckx, C. 2003. *Islands and Chains. Resumption as stranding*. Amsterdam: John Benjamins.
- Bošković, Ž. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59:1–45.
- Chomsky, N. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge MA: The MIT Press.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–156. Cambridge MA: The MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2004. Beyond explanatory adequacy. In *Structures and Beyond: The cartography of syntactic structures*, Vol. 3, A. Belletti (ed.), 104–131. Oxford: OUP.
- Chomsky, N. 2005. Three factors in language design. *Linguistic Inquiry* 36:1–22.
- Collins, C. 2003. The distribution of particles in quotative inversion. Ms., Cornell University.
- Diesing, M. 1992. *Indefinites*. Cambridge MA: The MIT Press.
- Fox, D. 2000. *Economy and Semantic Interpretation*. Cambridge MA: The MIT Press.
- Heck, F. and G. Müller. 2000. Repair-driven movement and the local optimization of derivations. Ms., Stuttgart University and IDS Mannheim.
- Henry, A. 1995. *Belfast English and Standard English: Dialect variation and parameter setting*. Oxford: OUP.

- Hermón, G. 1984. *Syntactic Modularity*. Dordrecht: Foris.
- Jonas, D. 1996. Clause Structure and Verb Syntax in Scandinavian and English. PhD dissertation, Harvard University.
- Kayne, R. 2004. Antisymmetry and Japanese. In *Variation and Universals in Biolinguistics*, L. Jenkins (ed.). Oxford: Elsevier.
- Kitahara, H. 1997. *Elementary Operations and Optimal Derivations*. Cambridge MA: The MIT Press.
- Koenenman, O. and A. Neeleman. 2001. Predication, verb movement and the distribution of expletives. *Lingua* 111: 189–223.
- Koopman, W. and W. van der Wurff. 2000. Two word order patterns in the history of English: Stability, variation and change. In *Stability, Variation and Change of Word-Order Patterns over Time*, R. Sornicola, E. Poppe and A. Shisha-Halevy (eds), 259–283. Amsterdam: John Benjamins.
- Kroch, A. 1989. Reflexes of grammar in patterns of language change. *Language Variation and Change* 1: 199–244.
- Lightfoot, D. 1991. *How to Set Parameters: Arguments from language change*. Cambridge MA: The MIT Press.
- Mathieu, E. and I. Sitaridou. 2005. A diachronic account of split-*wh* constructions in Greek. In *Grammaticalization and Parametric Variation*, M. Batllori et al (eds.), 236–250. Oxford: OUP.
- McCloskey, J. 1992. Adjunction, selection, and embedded verb second. Ms., University of California at Santa Cruz.
- McCloskey, J. 2004. Questions and questioning in a local English. Ms., University of California at Santa Cruz.
- Miyagawa, S. 1997. Against optional scrambling. *Linguistic Inquiry* 28: 1–26.
- Miyagawa, S. 2003. A-Movement scrambling and options without optionality. In *Word Order and Scrambling*, S. Karimi (ed.), 177–200. Oxford: Blackwell.
- Nishigauchi, T. 1990. *Quantification in the Theory of Grammar*. Dordrecht: Kluwer.
- Pesetsky, D. and E. Torrego. 2001. T-to-C movement: Causes and consequences. In *Ken Hale: A life in Language*, M. Kenstowicz (ed.), 355–426. Cambridge MA: The MIT Press.
- Pesetsky, D. and E. Torrego. 2004. Tense, case, and the nature of syntactic categories. In *The Syntax of Time*, J. Guéron and J. Lecarme (eds), 495–538. Cambridge MA: The MIT Press.
- Progovac, L. 1998. Determiner phrase in a language without determiners. *Journal of Linguistics* 34: 165–179.
- Radford, A. 1997. *Syntactic Theory and the Structure of English. A minimalist approach*. Cambridge: CUP.
- Reinhart, T. 1995. Interface strategies. *OTS Working Papers in Linguistics*. Utrecht.
- Richards, M. 2004. Object Shift and Scrambling in North and West Germanic: A case study in symmetrical syntax. PhD dissertation, University of Cambridge.
- Richards, M. and T. Biberauer. 2004. Optionality, loss of inflection and the rise of expletives: Why Faroese is a VO Afrikaans. Paper presented at the Workshop on Faroese, Reykjavík.
- Richards, M. and T. Biberauer. 2005. Explaining *Expl*. In *The Function of Function Words and Functional Categories*, M. den Dikken and C. Tortora (eds), 115–153. Amsterdam: John Benjamins.
- Richards, N. 1997. *Movement in Language. Interactions and architectures*. Oxford: OUP.
- Roberts, I. and A. Roussou. 2003. *Syntactic Change. A minimalist approach to grammaticalization*. Cambridge: CUP.

- Schönenberger, M. 2001. *Embedded V-to-C in Child Grammar: The acquisition of verb placement in Swiss German*. Dordrecht: Kluwer.
- Schwartz, B. and S. Vikner. 1996. The verb always leaves IP in V2 clauses. In *Parameters and Functional Heads*, A. Belletii and L. Rizzi (eds), 11–63. Oxford: OUP.
- Simpson, A. and T. Bhattacharya. 2000. Feature-percolation, pied piping and transparency. Ms., SOAS and UCL. [<http://mercury.soas.ac.uk/Linguistics/papers/whcp.pdf>]
- Simpson, A. and T. Bhattacharya. 2003. Obligatory overt *wh*-movement in a *wh*-in-situ language. *Linguistic Inquiry* 34: 127–142.
- Thráinsson, H. 2003. Syntactic variation, historical development, and minimalism. In *Minimalist Syntax*, R. Hendrik (ed.), 152–191. Oxford: Blackwell.
- de Urbina, J. 1990. Operator feature percolation and clausal pied piping. In *Papers on Wh Movement*, L. Cheng and H. Demirdarche (eds), 193–208. Cambridge MA: The MIT Press.
- Vikner, S. 1995. *Verb Movement and Expletive Subjects in the Germanic Languages*. Oxford: OUP.
- Wurmbrand, S. 2004. No TP fronting meets nearly headless Nick. Ms., University of Connecticut.
- Zanuttini, R. and P. Portner. 2003. Exclamative clauses: At the syntax-semantics interface. *Language* 79: 39–81.

Focus and clause structuration in the minimalist program

Aritz Irurtzun

EHU-U. Basque Country & HiTT <fvbirsva@vc.ehu.es>

Abstract

This article explores the possibility that the derivation of focus from syntax to LF can be implemented in a direct and transparent way. Assuming the principles of Bare Phrase Structure, I develop a derivational construal of the focus structure and provide a syntax of focus in Basque combining it with an eventish logical form whereby the focus falls in the scope of a binary existential quantifier (*cf.* Herburger (2000)). Adopting recent ideas of Hornstein & Uriagereka (2002), this transparent interface is accomplished by allowing binary quantifiers to reproject at LF to get their nuclear scope.

1. Introduction¹

The analysis of ‘focus’ has always been problematic for any model of generative grammar that tries to account for the properties of I-languages abstracting away from external use of language and discourse factors. The following passage from Chomsky (1995b:220) attests the problematic nature of focus:

Notice that I am sweeping under the rug questions of considerable significance, notably, questions about what in the earlier Extended Standard Theory (EST) framework were called ‘surface effects’ on the interpretation. These are manifold, involving topic-focus and theme-rheme structures, figure ground properties, effects of adjacency and linearity and many others.

In this paper, I analyze the place of focus in the general architecture of the grammar from a minimalist perspective and how the insertion of focus affects the syntax and semantics of a sentence. In Section 2 I review the main approaches to the syntax of focus (the ‘Left Periphery’ one and the ‘NSR-based’ one) discussing their main imports and shortcomings. In Section 3, I present an alternative to the previous approaches by combining the derivational approach to focus structure of Irurtzun (2003) and the neo-Davidsonian semantic representation at logical form of Herburger (2000). In Section 4, I apply the proposal of Section 3 to Basque, a language that shows some effects of focalization in overt syntax, and provide a syntax for the semantics of focus,

adapting the predicate analysis of quantifiers of Larson (1991) and the reprojection mechanism of Hornstein & Uriagereka (2002). A summarizing and concluding section follows.

2. Left periphrastic & NSR-based theories of focus

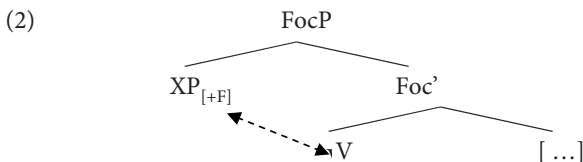
In recent years, two main syntactic approaches have been developed to account for the syntactic effects of focus; I will call these the ‘Left Periphrastic’ approach (grouping works like Brody (1990), Ortiz de Urbina (1995) and Rizzi (1997)) and the ‘*Nuclear Stress Rule*-based’ approach (henceforth ‘NSR-based’ approach, grouping works like Neeleman & Reinhart (1998), Zubizarreta (1998) and Arregi (2003a)). Next, I will summarize the main advantages and shortcomings of each of these approaches.

2.1 The ‘Left Periphrastic’ approach

The ‘Left Periphrastic’ approach starts out from the observation that in some languages, focus affects the syntactic configuration of the clause by appearing at the left periphery. This includes languages like Basque in which the focus phrase appears in the immediately preverbal position:

- (1) a. Broad Focus: Urtzik bokata jaten du
 Urtzi sandwich eat AUX
 ‘Urtzi eats the sandwich’
 b. Narrow Focus: [Urtzik]_F jaten du bokata
 Urtzi eat AUX sandwich
 ‘[Urtzi]_F eats the sandwich’

In order to account for these dislocations, in this type of approaches it is posited that a functional head (be it C°, Foc°, F° or any other) attracts the focalized element to its specifier and that the verb raises to its head to check the [+F] feature against the focal XP in a local relation. Thus, the [+F] feature of the focalized XP is checked in a Spec-Head relation observing a ‘Focus Criterion’ (Horvath (1995), Ortiz de Urbina (1995)), as shown in (2):



This head could be immersed in a series of heads encoding different discourse notions as in L. Rizzi’s (1997) cartography of the left periphery:

(3) Force (Topic) ... (Focus) ... Fin ... IP

This analysis of the surface configuration by the postulation of syntactically triggered movements accounts in a very straightforward way for some of the restrictions that focalization observes in these languages. These are Weak Crossover and island effects, pied-piping phenomena, the behavior of long distance movements, etc.

There are many subtleties involved in this approach, but I will leave their discussion for Section 4, where I discuss Basque data that shows the presence of a left peripheric head triggering focus movements. There, I will adopt a version of this approach to analyze Basque focalization in detail. Here, I just want to observe one of the shortcomings of the left peripheric approach: despite the fact that it might explain very comprehensively the syntactic transformations that a focalized XP might trigger in a clause, there is no explanation of how it is that this XP is focused. In other words, under this approach, we have to assume that a given XP is focused without any explanation of how it gets its focal status in the way from the numeration to spell out.

2.2 The 'NSR-based' approach

In contrast to the 'Left Peripheric' approach, the NSR-based approach has a more explanatory aim regarding the issue of how a given XP is focused in a given sentence.

This approach starts out from the observation that *Nuclear Stress* (henceforth NS) apparently falls on different positions in different languages.² As seen in the out-of-the-blue sentences in (4a-b):

- (4) a. ENGLISH: Jesus preached to the people of JUDEA.
b. BASQUE: Jesusek JUDEAKO jendeari predikatu zion.
Jesus Judea-of people-to preached AUX

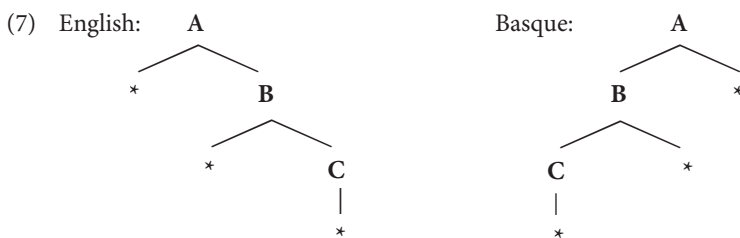
In order to capture this asymmetry, Halle & Vergnaud (1987) proposed a parametrically variable *Nuclear Stress Rule* (NSR). They postulated different parametric settings of the rule for typologically different languages like Basque and English. Departing from this parametric NSR, Cinque (1993) shows that the surface differences in NS placement observed in both types of languages could be very easily derived from deeper differences between them: namely, the Head Parameter. Whereas English is a Head-First language, Basque has been analyzed as being Head-Last (*cf.* among others Arregi (2003a, 2005)).³ Therefore, Cinque (1993) proposes a much more principled NSR to account for the (lack of) variability in NS assignment:

- (5) Nuclear Stress Rule (Cinque (1993)):
- Interpret boundaries of syntactic constituents as metrical boundaries.
 - Locate the heads of line *N* constituents on line *N*+1.
 - Each rule applies to a maximal string containing no internal boundaries.
 - An asterisk on line *N* must correspond to an asterisk on line *N*+1.

This NSR will blindly assign grid marks to XPs and according to it, the deeper an element is in the syntactic structure, the deeper it will end up in the metrical grid. The derivation of the NS placement will be straightforward: the element with most grid marks will get the NS in an out-of-the-blue context:

- (6) a. Jesus preached to the people of JUDEA.
 b. . . . * Line 7
 (. . . *) Line 6
 (. (. . *)) Line 5
 (* (. (. *))) Line 4
 ((*) (* (* (*))) Line 3
 [Jesus] [preached] [to the] [people] [of Judea]]]

According to the *NSR* in (5), the different surface locations of the *NS* in English and Basque would follow from differences in their syntax, not from any differences in their phonology; basically, the head parameter setting difference will derive in a different metrical grid for each language:



This basic *NSR* that assigns *NS* to the most embedded element in any clause predicts the facts correctly in out-of-the-blue contexts, since it is claimed that the focus marking on the element that gets the *NS* might project higher up, up to the matrix node (the entire clause). This is accomplished by the postulation of another principle: a “focus to accent constraint” that assigns focus to the element that dominates the element bearing the *NS*. For instance, the sentence in (8) with *NS* on the object “Mary” would have an ambiguous Focus-Structure (F-Structure), or what Neeleman & Reinhart (1998) call a “Focus Set” (a set of the potential foci given a certain *NS* placement from which discourse –not grammar– will pick up the “actual” focus of the sentence):

- (8) [[[John [kissed [MARY]_E]_E]_E. (Focus Set={IP, VP, Obj})

However, it is not always the case that the most embedded element (or any of the nodes that dominate it) is the focus of the sentence. Therefore, another postulated principle comes at play whenever we want to derive focus marking on a different XP: the ‘accent to focus constraint’; a principle whereby the focus has to bear the *NS* at the end of the derivation. Thus, if the element that is focused is not the most embedded one or any element dominating it, some marked operations will have to take place. These operations can be of two types: (i) marked stress assignments to ‘the element that is to be focused’ or (ii) ‘stress-avoiding movements’ of the most embedded

element so that ‘the element that is to be focused’ ends up as the most embedded one in the structure, and thus it gets the *NS* via the *NSR*. With the application of these marked operations we circumvent a violation of the “accent to focus constraint”. This is, basically, the proposal in Neeleman & Reinhart (1998) for English in (9) and Dutch in (10), English adopting the ‘stress shifting’ operations (9b) while Dutch adopts the ‘scrambling’ ones (10b):

- (9) a. John kissed MARY. (Focus Set={IP, VP, Obj})
b. John KISSED Mary. (Focus Set={IP, VP, V})
- (10) a. dat Jan gisteren het BOEK gelezen heft.
that John yesterday the book read has
“that John read the book yesterday”
(Focus Set={IP, VP, Obj.})
b. dat Jan het boek gisteren GELEZEN heft.
(Focus Set: {IP, VP, V})

Finally, an economy principle will ban the choice of VP or IP from the focus sets of the (b) examples, since these potential foci were already available through an automatic ‘projection of focus’ if the direct object was the accented element, and without having to recur to the marked ‘stress shift’ or ‘scrambling’ operations. Thus, the actual focus in both (b) sentences will be the verb.

I won’t discuss these issues now but I will just note here that there are some empirical and conceptual inadequacies in this theory of F-Structure. For instance, in many languages categorically different pitch accents are used to convey broad vs. narrow foci, which shows that the F-Structure of a sentence is not ambiguous (hence, the focus set does not exist computationally). Likewise, it has been observed for many languages that the ‘actual’ focus induces a specific prosodic phrasing in surface phonology (so, what the actual focus is has to be available for the phonological component). Furthermore, the ‘stress avoiding’ movements are instances of global look ahead operations that are at odds with the core minimalist assumptions (*cf.* Irurtzun (2003) for details and further discussion). I will leave these issues here and after presenting my alternative to these approaches, I will resume to the discussion of the *NSR*-based theory (and some of its shortcomings when it comes to Basque data).

3. Focus structure and interpretation

In this Section I present a syntactic theory of F-Structure construal and its semantic interpretation, combining some of the postulates of the minimalist program in syntax, with an internalist Neodavidsonian semantics. First, I present my analysis of the derivation of the focus structure in narrow syntax and then, I adapt it to the logical form representation of focus proposed by Herburger (2000).

3.1 Derivational approach to the focus structure

Given the inadequacies of PF approaches to derive the focus structure, I will adopt a derivational approach to focus structure as proposed in Irurtzun (2003). According to this theory, the $[+F]$ feature is an optional formal feature and it is potentially assigned to several tokens of the numeration. The focus structure, instead of being ‘projected’ at PF, is constructed derivationally by means of Merge. In other words, when an element α and an element β undergo Merge, both of them bearing the $[+F]$ feature, a new syntactic object will be created that in “Bare Phrase Structure” terms (*cf.* Chomsky (1995a)), will be a set-theoretic object containing only $[+F]$ featured lexical items:

$$(11) \quad \{\alpha_F, \{\alpha_F, \beta_F\}\}$$

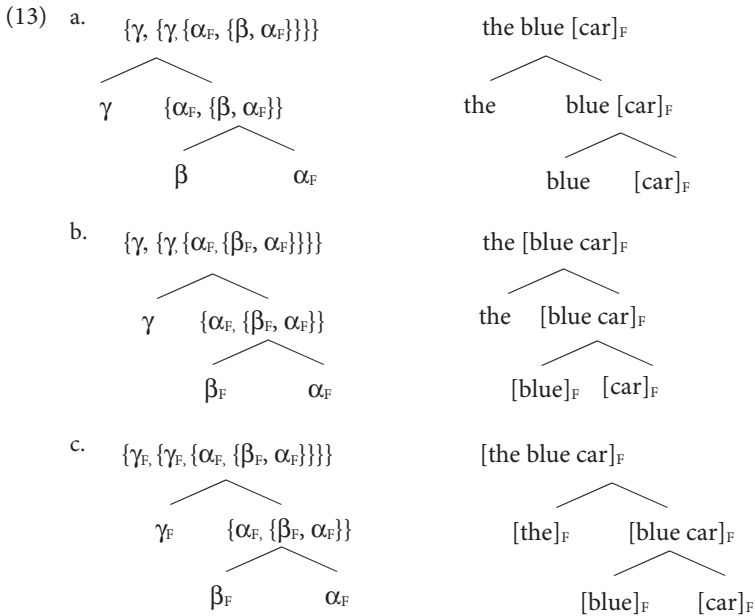
In that way, when a syntactic object/set of $[+F]$ featured lexical items is merged with an element that does not bear the $[+F]$ feature itself, the new syntactic/set-theoretic object will not be a set of containing only $[+F]$ featured elements, as the highest phrase in (12) shows:

$$(12) \quad \{\alpha_F, \{\gamma, \{\alpha_F, \{\alpha_F, \beta_F\}\}\}\}$$

Although the head (and label) of the structure in (12) is marked as $[+F]$, the whole structure won't be a set containing only $[+F]$ featured lexical items, since the element γ (a member of $\{\gamma, \{\alpha_F, \{\alpha_F, \beta_F\}\}\}$) does not bear the $[+F]$ feature itself. Precisely because of the lack of the $[+F]$ feature of γ , in this structure we will have just $\{\alpha_F, \{\alpha_F, \beta_F\}\}$ as focus. Thus, we keep a direct mapping between syntax and semantics and build semantic interpretation in a strict compositional way, and observing one of the core minimalist assumptions: the “Inclusiveness Condition” (Chomsky (1995b:228)):

Any structure formed by the computation (in particular, π and λ) is constituted of elements already present in the lexical items selected for N; no new objects are added in the course of computation apart from rearrangements of lexical properties...

Thus, depending on which lexical items enter into the derivation bearing the $[+F]$ feature, we will have different F-Structure possibilities within a DP:⁴



The adoption of this system allows us to construct the different F-structure possibilities depending directly on the elements selected for the numeration and, at the same time, it fixes the F-Structure already in the narrow syntax. Thus, the focus can have effects at both interface levels (PF and LF).⁵ Furthermore, it explains some of the problematic data for PF theories of focus projection from heads to phrases (*e.g.* Selkirk (1995)). For instance, the impossibility of having a QP focus when the Q bears the NS (*i.e.*, the impossibility of projecting from Q to QP). For example, in (14), with the universal quantifier ‘all’ bearing the NS, the reading where the whole QP is focused is unavailable, and the only possible reading is the one where only the Q is focused:⁶

(14) [[ALL]_F the girls] sang a song. vs. *[[ALL] the girls]_F sang a song.

As just mentioned, this derivational system of F-Structure construction will predict automatically the size (and at LF, the semantic import) of focus in a strict and compositional way: basically, it will be a direct product of the numeration (which elements enter into the derivation bearing the [+F] feature) and the syntactic derivation from it (phrase marker construction *via* merge). Therefore, this derivational analysis of the focus structure as a rearrangement of the lexical properties of the items of the numeration, combined with the neo-Davidsonian semantics to be introduced in the next section, should be regarded as an attempt towards an internalist exploration of the knowledge of meaning; one that “could be considered syntax in the technical sense” (Chomsky (2000a: 174)).

3.2 Semantics of focus

In order to provide a semantics to the focus phrase, I will adopt the “eventish” proposal of Herburger (2000). She presents a theory of focus interpretation based in the event semantics approach first proposed by Davidson (1967) and later developed by Parsons (1991) and Schein (1993) among others.

The basic idea of the proposal is to take a proposition to be a description of an event, verbal arguments and adjuncts to be predicates of the event and the focus to fall in the scope of a restricted existential quantification over the event. Thus, the sentence in (15a) will have the logical form in (15b), where the non-focused chunk is the restrictor of the existential quantification (*i.e.*, the sentence’s ‘aboutness’) and the focus is in the scope (*cf.* Herburger (1998, 2000)):

- (15) a. Milan bought [CIDER]_F.
 b. $[\exists e: \text{Agent}(e, \text{milan}) \ \& \ \text{Buy}(e) \ \& \ \text{Past}(e)] \ \text{Theme}(e, \text{cider})$

This semantic representation captures in a very neat way the semantic relation between the focus and the rest of the sentence since there will be no need to add any ‘novelty of information’ or ‘not given information’ notion to the focus as a primitive; the novelty of the focus will be its relation to the rest of the sentence (the restrictor of the existential quantification). This relative novelty is much more accurate than the absolute novelty for focus proposed in many of the works dealing with focus as ‘new information’ *vs.* ‘old information’ since, as can be seen in the question/answer pair in (16a-b), the actual focus of the sentence doesn’t have to be absolutely new or non-given in the discourse (*ex. from* Rooth 1996: 271):

- (16) a. Does Ede want tea or coffee?
 b. Ede wants [COFFEE]_F
 c. $[\exists e: \text{Agent}(e, \text{ede}) \ \& \ \text{Want}(e) \ \& \ \text{Present}(e)] \ \text{Theme}(e, \text{coffee})$

The focus of (16b) is not absolute new information in the discourse but relative new information in the proposition: relative to the non-focused part and contrasting with the other alternative in the discourse, ‘tea’, that in this dialogue is explicit but might not be so.

However, according to Herburger, and since focus has non-local effects, it won’t be enough to have the [+F] featured material in the scope; otherwise we wouldn’t be able to capture some of the possible meanings of sentences like (17) (*ex. 57 of* Herburger (2000)):

- (17) [_{CP1} Mary told me about [_{DP} the rumor [_{CP2} that Bill had said [_{CP3} that SUE was going to India].

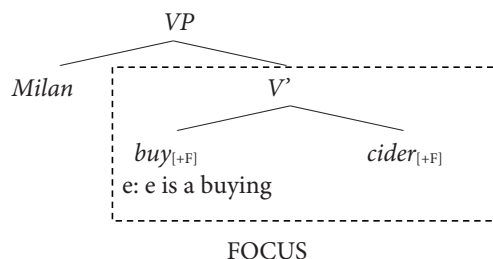
According to the judgments in Herburger (2000), the sentence in (17) can have at least the following three readings:

- (18) a. “Mary told me about the rumor that Bill said that it was SUE who was going to India”.
 b. “Mary told me about the rumor that it was SUE who was such that Bill had said that she was going to India”
 c. “It was SUE who was such that Mary told me about the rumor that Bill had said that she was going to India”

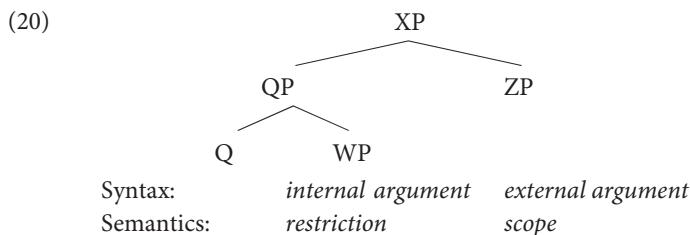
For instance, the reading in (18b) is obtained by having the focus affecting the event denoted by the verb ‘say’ in CP_2 and the one in (18c) is one where the focus affects the event of the CP_1 . Given these non-local effects of focus, at the scope of the event quantifier we cannot have just the focused phrase but the entire sentence. Thus, the specific import of focus will be just not being present in the restriction of the existential quantifier; that is, not being present in the sentence’s ‘aboutness’ (cf. Irurtzun (2006) for a reformulation of these ideas in terms of Russellian definite descriptions).

Assuming this basic LF representation for sentences and the derivational F-Structure construal presented in Section 3.1, we can now account for the semantic import of the focus phrase in a very straightforward, bottom-up fashion. The sentence in (19a) as an answer to the question in (19b) will have the logical form in (19c), derived as in (19d) (tense is omitted for simplicity):⁷

- (19) a. Milan [bought cider]_F
 b. What did Milan do?
 c. $[\exists e: \text{Agent}(e, \text{milan})] \text{Theme}(e, \text{cider}) \ \& \ \text{Agent}(e, \text{milan}) \ \& \ \text{Buy}(e)$
 d.



But now, a puzzle arises: the just sketched proposal proclaims a binary quantifier taking a restriction and a scope as the logical form representation of a sentence, but this configuration does not come for free. If we want to keep with the most commonly assumed (but not so commonly maintained) proposal that the syntax-semantics mapping is transparent and a direct function of the syntactic structure and the lexical meanings of the words it contains, the intended representation will have to be derived as a direct mapping from an LF syntactic structure that mirrors the postulated semantics. Thus, in order to get the desired results at logical form, Herburger proposes a process of “focal mapping” operation by which the nonfocused material in the c-command of the existential quantifier rises to its restriction (Herburger (2000: 43)):



Next, in Section 4, I will present the Basque focus data and propose a derivational analysis of them based in the logical form representation for focus just presented and adopting the reprojection analysis of binary quantifiers of Hornstein & Uriagereka (2002). As will be argued in 4.2, the proposal will give us a focus LF representation akin to that of (20) through a transparent syntax-semantics mapping.

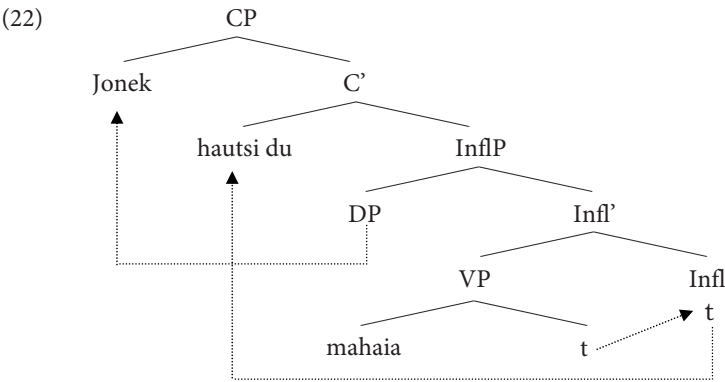
4. Focus in Basque

4.1 The data & discussion of previous literature

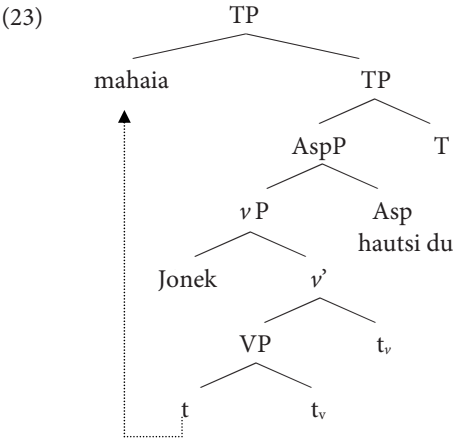
As already shown in Section 2, it is a well-known fact that (Central-Western) Basque shows Focus-Verb adjacency (see among others Ortiz de Urbina (1983, 1989, 1999), A. Elordieta (2001), Arregi (2003a), or, more generally, Hualde & Ortiz de Urbina (2003)). Thus, the sentence in (21a) is ungrammatical because the focalized subject and the verb are not adjacent whereas the variants in (21b-c) are grammatical:⁸

- (21) a. *[JONEK]_F mahaia hautsi du.
 Jon table broke AUX
 ‘[John]_F broke the table’
- b. Mahaia [JONEK]_F hautsi du.
- c. [JONEK]_F hautsi du mahaia.

The traditional way of analyzing these data has been in terms of the ‘Left Periphrastic’ approach, that is, by the postulation of a strong [+F] feature that has to be checked against the verb in a Spec-Head configuration in a functional projection (traditionally CP or FP cf. Artiagoitia (2000)):



On the other hand, and contrary to the Left Periphrastic approach, under the *NSR* based theory of focus, the movements that derive the surface word order are not instances of feature checking, but movements in order to fulfill the legibility condition on derivations that requires focused elements to bear the *NS* at PF. Thus, according to the Cinquean version of the *NSR*, when a non-focused element is in the most embedded position in the clause, a ‘nuclear stress avoiding’ movement of this non-focused element takes place so that the focused element becomes the most embedded element in the structure and thus it gets the *NS*. These types of movements are the ‘scrambling’ mechanisms of A. Elordieta (2001) or the left and right dislocations of Arregi (2003a). A representation of the structure of the sentence (21c) under Arregi’s proposal is below:



According to this proposal, the surface Focus-Verb adjacency is just accidental, a byproduct of the ‘stress avoiding movements’ of the non-focused elements and the configuration of the lowest part of the clause.

Having this in mind, let’s review some data that show how the left periphrastic

approach is superior to the NSR-based one when attempting to account for the displacements triggered by focus:

4.1.1. Long-distance focus movements

In cases where the [+F] feature is in an embedded CP, long distance (LD) movement can take place up to the matrix CP, just the same as with the [+Wh] feature (*cf.* Eguzkitza (1986), Ortiz de Urbina (1989) or Hualde & Ortiz de Urbina (2003) among others). Arregi (2003a) discusses data like those in (24):

- (24) [JON]_F pentsatzen dut [_{CP} Mirenek *t* ikusi zuela]
 Jon think AUX Miren seen AUX
 ‘I think Miren saw [Jon]_F’

According to his analysis, the focus is extracted from its base-generated position, adjoining it to the matrix *v*P, and then, the embedded CP is right-dislocated.

Setting aside the shaky foundations of these untriggered movements, I don’t share the judgments in Arregi (2003a), judging this sentence as deviant.⁹ This, of course, is meaningless for the analysis in Arregi (2003a), which might be correct to account for the data in (24). But this analysis cannot account for the type of Long Distance Movement constructions that I and my informants find to be the optimal ones. These are sentences like (25a). A non-LD movement variant of (25a) can be found in (25b):¹⁰

- (25) a. [JON]_F pentsatzen dut [_{CP} ikusi zuela Mirenek]
 Jon think AUX seen AUX Miren
 ‘I think Miren saw [Jon]_F’
 b. Pentsatzen dut [_{CP} [JON]_F ikusi zuela Mirenek]
 think AUX Jon seen AUX Miren
 ‘I think Miren saw [Jon]_F’

Unless some untriggered movements are postulated, in neither case is ‘Jon’ in the most embedded position, and therefore, neither of the subjects in (25a) or (25b) can be focused according to the analysis in Arregi (2003a). Furthermore, it seems that the focus-verb adjacency is not a byproduct of these purported movements since this configuration is not restricted to the clause that contains the focus, rather, it is observed in all the clauses where the focus moved through. Given that the focus always appears at the left edge of the clause (be it the matrix one as in (25a), or in the embedded one as in (25b)) I think that it is more appropriate to assume some variant of the classical left periphrastic analysis, at the risk of having to stipulate some special relationship between the focus and the verb (see below). In fact, with respect to the left periphrastic behavior of focus, quite the same picture arises with the clausal pied-piping phenomena.

4.1.2. *Pied-piping phenomena*

From a minimalist point of view, one of the most striking phenomena of natural languages is that of clausal pied-piping in languages like Basque. In this language, as far as the classical analysis goes (*cf.* Ortiz de Urbina (1989, 1993)), clausal pied-piping can take place when an element bearing a [+Wh] or [+F] feature in a subordinate clause moves through Spec/CP position of this clause. On the other hand, according to Arregi (2003a)'s analysis, the same movements as those proposed for the LD movement sentences take place, with the difference that in pied-piping constructions it is not only the focused XP extracted from the embedded clause that adjoins to the matrix ν P, but the entire subordinate clause:

- (26) [[JON]_F etorriko dela bihar] Mireni esan diot.
 Jon come AUX-C^o tomorrow Miren-to said AUX
 'I told Mary that [Jon]_F will come tomorrow'

Again the same puzzle arises. His proposal fits his data; my judgments (and those in Laka & Uriagereka (1987) and Ortiz de Urbina (1983, 1999)) judge these sentences as ungrammatical or deviant.¹¹ Our judgments for a grammatical sentence with pied-piping are along the lines of (27):¹²

- (27) [[JON]_F etorriko dela bihar] esan diot Mireni.
 Jon come AUX-C^o tomorrow said AUX Miren-to
 'I told Mary that [Jon]_F will come tomorrow'

Again, unless more movements are posited, the focused element is not in the most embedded position in the clause, so the sentence should be ungrammatical according to Arregi's analysis. But at least for some speakers it is not.

As in the previous example, the focus appears at the left edge of the clause (suggesting the appropriateness of a left periphrastic analysis) and V2-like phenomena are observed in all the clauses, something I will analyze in the next Section.¹³

4.1.3 *Dialectal variation*

As has already been shown, in languages like (Central-Western) Basque, focus has to show/shows surface adjacency to the verb (28b-c) and sentences without this adjacency are ungrammatical (28a):

- (28) a. *[JONEK]_F mahaia hautsi du.
 Jon table broke AUX
 '[Jon]_F broke the table'
 b. Mahaia [JONEK]_F hautsi du.
 c. [JONEK]_F hautsi du mahaia.

As explained before, the Cinquean analysis for these data proposes that 'nuclear stress avoiding' movements take place in order for the non-focused material not to get the

nuclear stress. Recently, two versions of this type of analysis have been proposed for Basque:

– A. Elordieta (2001): Scrambling to prevent a non-focused element to receive Nuclear Stress.¹⁴

– Arregi (2003a): Left and right dislocations to avoid a non-focused element to receive Nuclear Stress.

Thus, as I have already said, for these approaches, Focus-Verb adjacency is just accidental, a by-product of NSR driven displacements and the configuration of the lowest part of the clause (*cf.* ex. 23). In other words, there is no special syntactic or phonological reason for the Focus-Verb adjacency; things just happen to be like this.

However, a look at Eastern dialects of Basque shows us that this adjacency is not accidental, since what we find in these dialects is not Focus-Verb adjacency but Focus-Auxiliary adjacency (*cf.* Ortiz de Urbina (1989, 1995), Laka (1990), and, more generally, Hualde & Ortiz de Urbina (2003)):

(29) Eastern Basque (M. Duguine, D. Duguine, J. Pochelu (p.c.)):

- a. Mahaia [JONEK]_F du hautsi.
 table Jon AUX broke
 ‘[Jon]_F broke the table’
- b. [JONEK]_F du mahaia hautsi.
 Jon AUX table broke
 ‘[Jon]_F broke the table’

Note that, given the clause structure of (23), no accidental adjacency could arise between the focused element and the auxiliary in (29a-b) just by the “left dislocation” or “scrambling” of the non-focused XP. Here, it really seems to be focus-auxiliary adjacency that matters in Basque focalizations. In that case, the surface focus-verb adjacency observed in Central Basque could be derived via a further movement (pied-piping of the verbal complex or head movement of the verb).

4.1.4 *Focus in infinitive constructions*

This point is a corollary to the previous one: if it is the inflected auxiliary what really is left adjacent to the focused XP, the prediction is that whenever we don’t have an auxiliary, the verb won’t necessarily be left adjacent to focus. This is precisely the pattern that we find in Basque: when we construct examples with infinitival subordinate clauses, the verb in the infinitival clause doesn’t undergo movement, whereas the inflected verb in the matrix one does. Compare in the following dialogue the out-of-the-blue uttered by A with the correction of B:

- (30) A: [Kepak ardoa edate-a] gauza arraroa da.
 Kepa wine drink-INF thing strange BE
 “It is a strange thing for Kepa to drink wine”
- B: Ez!, [[Julenek]_F ardoa edate-a] da gauza arraroa!¹⁵
 No Julen wine drink-INF BE thing strange
 “No!, It is a strange thing for [Julen]_F to drink wine!”

These examples show that the reason for the adjacency lies in the auxiliary, since in its absence, the verb in the subordinate clause doesn’t move, and the sentence still is grammatical. Furthermore, they point towards the appropriateness of a PF analysis of this adjacency, precisely because if the reason for the adjacency was syntactic (some sort of feature on the focus that has to be checked against tense), sentences like (30B) or the rightward focus constructions (*cf.* footnote 10) would be ungrammatical.¹⁶ Likewise, the movement of the verbal complex observed in long distance focus movements could be analyzed along the same lines: the affixation could apply before the copies of the moving phrase are deleted. Thus, the lack of total ungrammaticality of the long distance movement and pied-piping constructions where the movement of the verb does not apply could be analyzed as a phonological violation, not as incurring in a derivational crash.

4.1.5 *Summing up*

To sum up this subsection on Basque data, focalizations in Basque seem to be instances of syntactic movements to some left periphrastic head and not accent-triggered movements to satisfy a purported PF requirement; hence, they show many of the properties and restrictions of other syntactic movement like Wh-movement. Furthermore, the focus-verb adjacency should be analyzed as masking a true focus-tense relation; a relation that, as I will argue shortly, can be better analyzed as a PF phenomenon where tense is an affix of the focus.

4.2 The analysis

We saw that the semantic analysis of focus adopted in Section 3 assumes a logical form representation by which the existential quantification over events takes the non-focused part of the clause as the restriction and the whole clause (with the focused chunk inside) as the scope. Thus, I want to propose a new analysis of focalization based in a Spell Out satisfaction of some interface conditions: namely, a PF bare output condition on linearization and an LF ban on vacuous quantification. As argued in Section 3, at the end of the derivation, the desired result is one in which, for instance, in a sentence with focus on the object we get focus-verb adjacency at PF for Central Basque (or focus-AUX adjacency for Eastern Basque ((31a-b) respectively)). At logical form, we get a restricted quantification over events where all the material but the [+F] marked element is in the restriction, and all the material (including that with the [+F]

feature) is in the scope of this quantification. This is represented in the logical form of (31c):

- (31) a. [Ogia]_F jan du Urtzik.
bread eat AUX Urtzi
'Urtzi ate [bread]_F'
- b. [Ogia]_F du Urtzik jan.
bread AUX Urtzi eat
'Urtzi ate [bread]_F'
- c. $\exists e$ [Eat(e) & Past(e) & Agent(e, Urtzi)] [Theme(e, bread) & Eat(e) & Past(e) & Agent(e, Urtzi)]

In order to explain my analysis of these constructions, I will first introduce one of the bases of my proposal: the mechanism of 'reprojection' proposed by Hornstein & Uriagereka (1999, 2002).

4.2.1 Reprojections

Hornstein & Uriagereka (1999, 2002) start out from the relational view of binary quantifiers proposed in Larson (1991) and Larson & Segal (1995). According to this proposal, quantifiers are basically predicates of sets and binary quantifiers are dyadic predicates in that they take their "arguments" (the Q's restriction and scope) in an ordered way. For instance, when interpreting the sentence of (32), we create a subset/superset relation between two sets; the set of 'whalehood' and the set of 'mammalhood' (33):

- (32) All whales are mammals.
- (33) $\{y : y \text{ is a whale}\} \subseteq \{x : x \text{ is a mammal}\}$

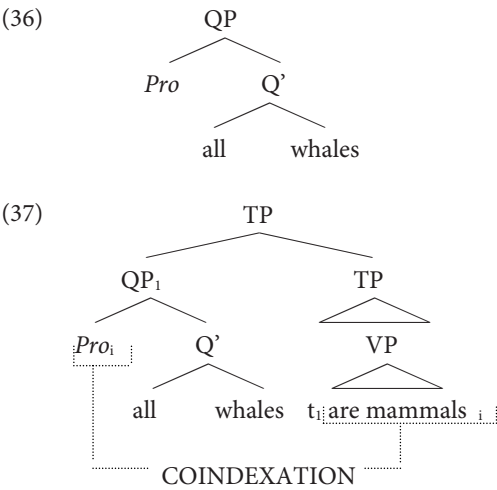
As argued by these authors, a natural way of capturing this asymmetry is to take the quantifier 'all' to be a predicate that takes the sets of 'whalehood' and 'mammalhood' as its internal and external arguments respectively:

- (34) ALL($\{y : y \text{ is a whale}\}$) ($\{x : x \text{ is a mammal}\}$)

Thus, the truth conditional difference between a sentence like (32) and a sentence like (35) would derive from the ordering of the arguments:¹⁷

- (35) All mammals are whales.

In order to guarantee the locality of the Q's argument-taking, and since the external argument of the Q is not evidently in its local domain (in the case of (32), the phrase '*t* are mammals' is not in the projection of the Q 'all'), Larson (1991) proposes that a silent *pro* is merged in the specifier of Q as in (36), thus providing the locus of the scope of the Q. He further proposes that this *pro* will get coindexed with the scopal phrase that gives it a value at LF, after QR (37):



Thus, the projection requirements of the predicative Q are satisfied, since it takes its restriction (‘whales’) by first merge, and its nuclear scope when the phrase ‘all whales’ is merged with the *pro* in its specifier. As can be observed, this is a very natural way of capturing the *conservativity* of natural language quantifiers (or, in Barwise & Cooper (1981)’s terms, what the Q *lives on*).

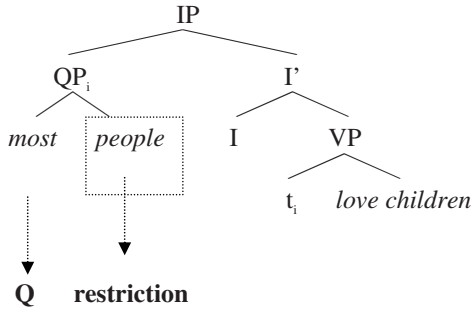
Going a step further and implementing the relational view of quantifiers just sketched, Hornstein & Uriagereka (1999, 2002) propose in pure ‘Bare Phrase Structure’ terms that a given phrase marker could have different labelings at different stages of the derivation. This would arise via a reprojection mechanism. A reprojection turns a phrase marker $\{Y, \{Y, X\}\}$ into a phrase marker $\{X, \{Y, X\}\}$:¹⁸



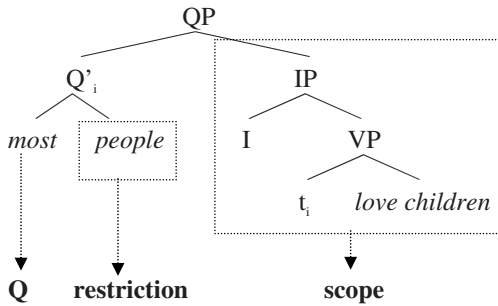
According to these authors’ analysis, and applying the idea that quantifiers are predicates, by way of reprojection, we can ensure the locality of quantifiers’ argument-taking without the stipulation of a null *pro* in their specifier. With their proposal, binary quantifiers like ‘most’ in (39), having acquired their ‘internal argument’ (*i.e.*, the restrictor ‘people’) by just being merged with them, can get the ‘external’ argument (*i.e.*, the scope) in the course of derivation. Following Hornstein & Uriagereka’s proposal, we can ensure the locality of the semantic composition of the Q and its arguments if we allow the Q to reproject higher up in the phrase, turning the phrase marker that at some derivational time Dt was $\{I, \{Q, I\}\}$ into $\{Q, \{Q, I\}\}$ at a later derivational time Dt' . This reprojection, by extending the Q’s projection space, allows the Q to take the external argument ‘*t* love children’ in its extended local domain:

(39) Most people love children.

Derivational Time Dt :



Derivational Time Dt' (after reprojection of the Q):



Besides of providing a neat syntax-LF mapping, the analysis has some welcome empirical consequences like predicting quantifier-induced islands or accounting for some definiteness effects that appear in nonexistential contexts (see the next section and Hornstein & Uriagereka (2002) for further details). Given that, I will adopt this proposal as a necessary condition in order to get the desired quantificational structure in logical form (see Herburger (2000) and the Section 3 of this work). So let's see how such an LF could be obtained in a derivational fashion.

4.2.2 Derivation of LF

Assuming a direct mapping from syntax to LF and minimalist desiderata, the first question that we have to solve is the following: Where does the (implicit) Davidsonian existential quantifier come from if we are not going to violate the *Inclusiveness Condition*?

Let's look again at the sentence in (19a) (represented here as (40a-b) for convenience):

-

Since the νP denotes a property of events and not yet a truth value, scholars like Higginbotham (1985) or Kratzer (1996) have proposed that some higher functional head introduces the existential closure to the event denoted by the verb; according to their proposals it is Infl^o. The idea is appealing but we would run into a problem whenever we had T^o (or Infl^o) marked as [+F] as well as in an infinitival construction like those shown in 30.¹⁹ Furthermore, there is convincing evidence against treating Tense as an operator and arguing that it should rather be regarded as a predicate of events that orders the event time with respect to the utterance time (*cf.* Stowell (1996), Demirdache & Uribe-Etxebarria (2000) and Higginbotham (2002) among others). Given this state of affairs, another syntactic node will have to introduce the existential quantification for the event denoted by the verb. Looking at the literature, one of the options seems to be to assume some version of the ‘split CP’ proposed by Rizzi (1997) and presented in Section 2:

- (41) Force (Topic) ... (Focus) ... Fin ... IP

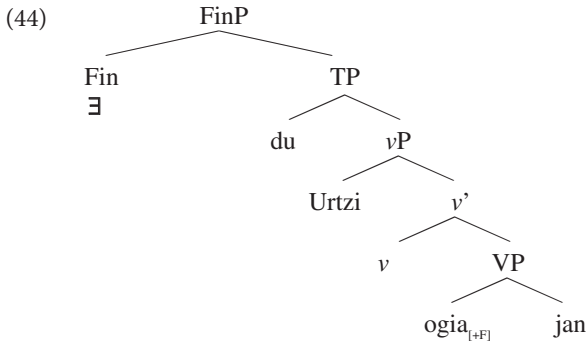
Adopting this system, I would like to propose that it is the Finiteness head that introduces the binary existential quantifier to the event denoted by the verb, whereas Tense (or Infl) introduces a temporal predicate of events that combines with the ν P via predicate conjunction:

- Fin TP e[...] & T(e)...
- ∃ [[]]
- T vP
- T(e) e[...]

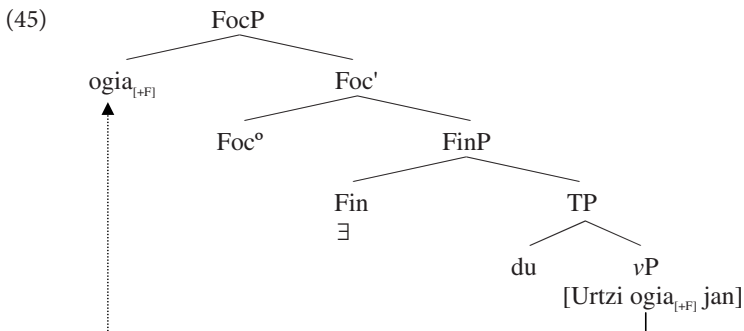
Now, assuming the Derivational Approach to the Focus Structure presented in Section 4 and the phrase structure in (42), I would want to propose a derivational approach to the structure of sentences like (31a-b) (repeated here as (43a-b) respectively):

- a. [Ogia]_F jan du Urtzik.
bread eat AUX Urtzi
'Urtzi ate [bread]_F'
- b. [Ogia]_F du Urtzik jan.
bread AUX Urtzi eat
'Urtzi ate [bread]_F'

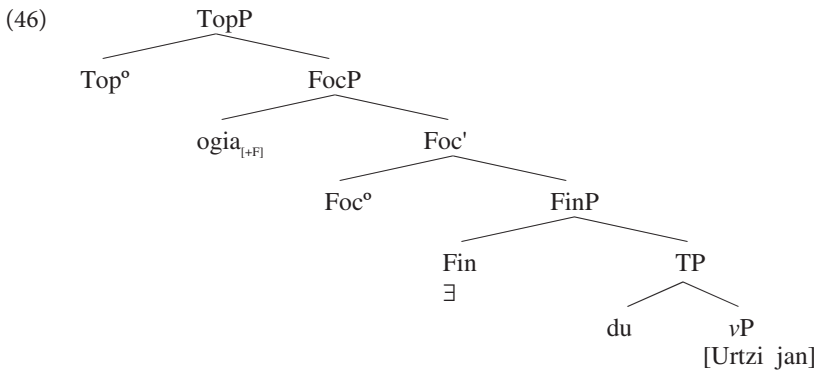
For instance, for the sentence (43a) we arrive to a derivational stage like (44) where the Fin° (i.e. the lexically binary \exists) has been merged with TP (cf. (42)):



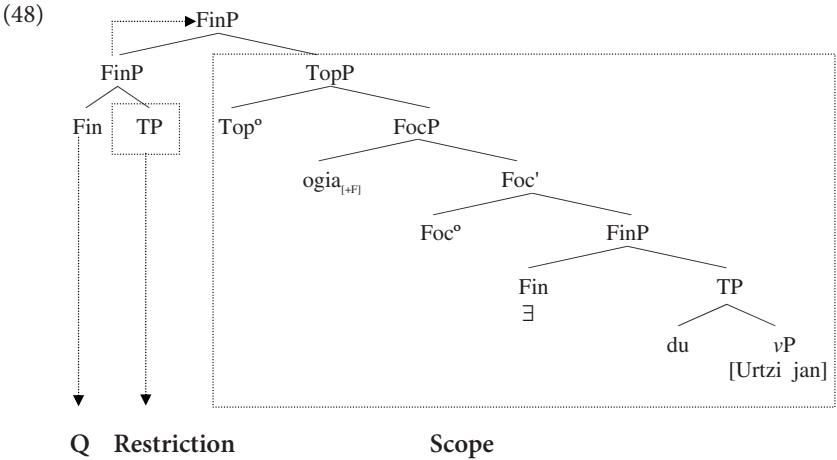
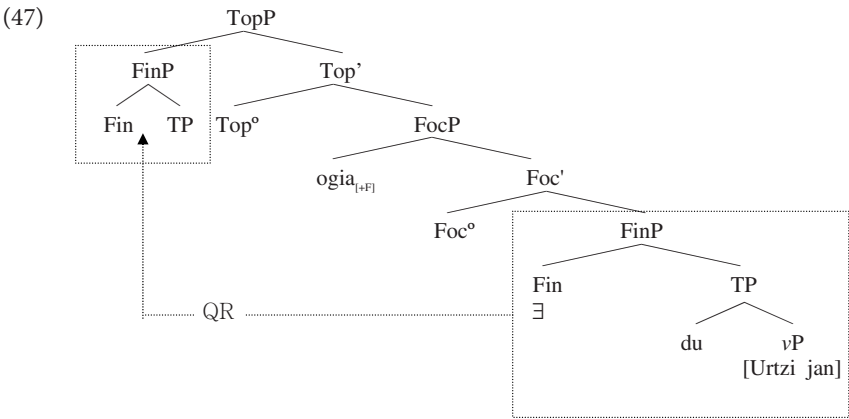
Then, following Ortiz de Urbina (1999) or Rizzi's (1997) system again, the Focal head Foc° is merged, attracting the Focus to its specifier:^{20–22}



The Top° head is merged next:



Now, following the relational view of quantifiers of Larson (1991) and Larson & Segal (1995) and the reprojection mechanism proposed in Hornstein & Uriagereka (1999, 2002), I want to suggest that the lexically binary existential quantifier in Fin° that got its “internal argument” (TP) when first merged, but that at this derivational stage lacks the “external argument” (*i.e.*, the scope), will undergo an operation of Quantifier Rising (that could also be a topicalization) to the next available position (the specifier of Top°), (47). Then, it reprojects, thus gaining the “external argument” in its extended local domain (48):²³



That is, by way of the reprojection, we get the quantificational phrase ($\text{FinP}/\exists\text{P}$) at the top node dominating a quantifier (\exists), its restriction (TP) and its scope (TopP).²⁴

Here, a possible puzzle arises concerning the timing of the reprojection: that a reprojection could take place overtly is seen as problematic by Hornstein & Uriagereka, who argue that it would change the checking relations (notably for case and agree-

ment). Hence, they claim that reprojections would have to take place covertly and very late in the derivation, once all these relations have already been exploited in overt syntax. However, in principle, there should be no problem in having a system where reprojection can take place after all agreement relations are set, and just before Spell Out (as potentially in the proposal just sketched for focus, where the reprojection of Fin° takes place in the ‘C-domain’).²⁵ On the other hand, and as one of the welcome empirical predictions that Hornstein & Uriagereka’s proposal brings, it is a late application of the reprojection that allows them to account for the quantifier-induced island phenomena (*cf.* Hornstein & Uriagereka (1999, 2002)). I won’t enter here in the discussion of the timing of the reprojection and spell out (*cf.* Irurtzun (2005b, 2006)), and I will simply assume that both QR and reprojection take place covertly. Thus, after spell out, we get a PF representation of (43) where the focal object is linearized first, followed by the tense, subject and verb:

$$(49) \quad \text{O}_{[+F]} \text{ T S } \nu \text{ V}$$

Given that, I would like to suggest a PF affixation analysis of the problematic nature of the Focus-Verb adjacency: Adapting the recent proposals of Chomsky (2000b, 2001) or Boeckx & Stjepanović (2001) that head movement takes place at PF, I would like to postulate that PF head-lowering applies in Central Basque, leaving the verbal complex $[\text{V} + \nu + \text{T}]$ at the right edge of the string. Then, the affixation of the tense and, with it, the movement of the whole verbal complex to the focal phrase, will give us the word order that we observe in Central Basque, whereby the focus is left-adjacent to the verb in PF:

$$(50a) \quad \text{O}_{[+F]} [\text{V} + \nu + \text{T}] \text{ S} \quad (50b) \quad [\text{Gazta}]_F \text{ jan du Urtzik}$$

cheese eat AUX Urtzi
'Urtzi ate [cheese]_F'

Thus, the asymmetry observed between Eastern Basque and Central Basque would be derived from the availability (in the Central dialects) or unavailability (in the Eastern ones) of the T-lowering ((43a) and (43b) respectively).²⁶

Furthermore, this analysis of tense as being affixed to the focus phrase might help us understanding the word order observed in out-of-the-blue sentences (S-O-V-AUX). These sentences could be analyzed as being structurally simpler (involving less projections and transformations) than sentences where an argument or adjunct is in focus: whereas in adjunct or argument focalizations displacements are involved, in out-of-the-blue (all new) sentences, all the elements would remain *in situ*. A reason for that could be that the complementizer system of both constructions is different (involving different Fin° heads): in argument or adjunct focalizations a binary quantifier is merged and in out-of-the-blue sentences the quantifier is unary (lacking any restriction). Likewise, in out-of-the-blue sentences there won’t be any need for a Foc° triggering focus movements, and all elements will remain in the scope of the unary existential quantifier (all *new* information). On the other hand, in adjunct or argument

focalizations, the quantifier selected will be a binary one (maybe better understood as an iota-quantifier than as an existential one, itself selected by a Foc° (see more on this in Irurtzun (2006))). Thus, in out-of-the-blue constructions, the linear order of the elements will be the following one (again, assuming a case-checking displacement of the object to $\text{Spec-}\nu\text{P}$):

- (51) T-S-O- ν -V

If, as suggested, PF lowering applies rendering $[\text{V}+\nu+\text{T}]$ at the right edge of the string and then the T-affixation takes place, the word ordering obtained will be the following:

- (52) S-O- $[\text{V}+\nu+\text{T}]$

Obviously, this stipulated affixal nature of tense is something that has to be proven, but at this stage, it seems to me to be a plausible hypothesis. In fact, certain positive polarity-marking constructions of Basque show this affixal nature of the T° head. For instance, in (53), where an emphatic affirmative morpheme ‘ba’ appears, the auxiliary necessarily appears attached to the morpheme ‘ba’ (cf. Ortiz de Urbina (1989), Laka (1990)):

- (53) Jon ba-da etorri.
Jon ba-AUX come
‘Jon has so arrived’

However, these issues deserve a much more specific investigation, studying cross-linguistic and dialectal variation as well as the patterns of T-to-C movements of Wh-constructions. The issue is open for further research.

5. Summary and conclusions

In this article, I explored the nature of focus from a minimalist perspective and looking closely at Basque data. In strict Bare Phrase Structure terms, I proposed an alternative and derivational approach to the focus structure based on a potentially multiple assignment of $[+F]$ features to different lexical items. With them, the focus structure is constructed derivationally via merge in the narrow syntax. After arguing for a left periphrastic approach to the syntax of focus, I analyze the derivational dynamics of the syntax-LF derivation proposing a direct and transparent interface. Thus, assuming the logical form representation in Herburger (2000) whereby the focus falls in the scope of a restricted quantification over events, I argued for a system where the syntax feeds the semantics via a direct mapping where the binary quantifier gets its scope in the course of derivation. This aim is approached adopting Hornstein & Uriagereka’s (2002) mechanism of ‘reprojection’ that allows a binary quantifier to reproject, thus extending its local domain to get its second argument. Some issues remain to be

resolved; among them, the affixal nature of the tense or the timing of the reprojection. Issues that deserve a more specific analysis.

Notes

1. This research was supported by the grants BFF2002-04238-C02-01 of MCYT-FEDER, UPV-EHU 9 UPV 00114.130-160.09-2004 U of EHU-U. Basque Country and a predoctoral research grant by the Basque Government. I want to thank Juan Uriagereka, Elena Herburger, Gorka Elordieta, Javier Ormazabal, Myriam Uribe-Etxebarria, Richard Larson, Utpal Lahiri, Milan Rezac, Melanie Jouisseau, Urtzi Etxebarria, Maia Duguine, Susana Huidobro and Ángel J. Gallego for comments and helpful discussion. Usual disclaimers apply.
2. The *NS* is basically the 'main' stress of a sentence, and it has been observed to have a range of special properties when compared to other accents in an utterance in different languages (a different pitch shape, increased fundamental frequency (F0) values, strict alignment with the accented syllable...). This relative prominence and alignment differences are mysterious for the Autosegmental-Metrical theory of intonation since, in principle, and giving the postulates of this theory, there is no reason for the *NS* to behave in a different way than any other accent having the same label or internal structure. But, apparently, it does. It could be argued that '*NS*' is more a taxonomic or observational notion than a theoretical primitive, but I think that the evidence for treating these pitch accents as categorically different entities from the rest of the pitch accents is convincing, whatever this means.
3. This is, however, a very controversial and open issue (*cf.* Hualde & Ortiz de Urbina (2003) for an extensive presentation of Basque data and Artiagoitia (2000) for a nice review of the literature).
4. Only some of the possibilities are represented, and all three are structures where the [+F] featured lexical items that enter into the derivation are merged with each other. There are other possibilities though, and among them, cases where for instance just a Det and a Noun enter the derivation bearing the [+F] feature but the lexical items don't merge together (the same with a subject and object, and so on). These are more complex constructions involving answers to multiple questions and split focalizations (*cf.* Irurtzun (2005b) for an analysis these constructions).
5. Observe that, having the F-Structure already set in the narrow syntax, there will be no trouble in PF since the *NSR* can be sensitive to the F-Structure. The phonological component will assign the *NS* to the most prominent element *within focus*, that is (the element with most grid marks following Cinque (1993)) and apply the appropriate focus-affected phonological phrasing. See Irurtzun (2003) for more on this.
6. There are some additional interesting issues concerning this type of data since in an out-of-the-blue context a sentence like (14) can have both a distributive or collective reading, whereas in a context where the universal quantifier is focalized the only available reading is the distributive one (*cf.* Irurtzun & Etxebarria (2004)). Recall that even though I won't be adopting this model here, to be able to predict the semantic import of focus is a necessary condition for the 'Alternative Semantics' approach of focus semantics (Rooth (1985, 1992)). According the Alternative Semantics, the semantic contribution of focus is to add to the 'Ordinary Semantic Value' (the proposition that the sentence denotes) an additional 'Focus Semantic

Value' constituted by alternative propositions obtained by the substitution of the focused phrase with alternatives available in the discourse that *match the focus in semantic type*.

7. I will leave the issue of where the existential quantifier comes from for Section 4.2.

8. There are also some highly contrastive constructions like those analyzed in Ortiz de Urbina (2003). These are cases where the focus appears at the right edge of the clause preceded by the rest of the sentence. For instance, the example (i) could be a variant of (21):

- (i) Mahaia hautsi du [Jonek]_F.

I won't discuss these types of constructions here (cf. Irurtzun (2005b, 2005c).

9. In both Ortiz de Urbina (1983) and Laka & Uriagereka (1987), constructions like (24) appear with a *. I (and my informants) don't feel that the deviance is that strong, maybe, enough to be marked as a ? (or ??, as in Ortiz de Urbina (1989)). At any rate, as will be argued (see below), the important fact here is that for some speakers, the optimal realization of a LD-moved focus is that in (25a), not that in (24), and unless one more *ad hoc* movement is posited to derive the Subject-Verb inversion of the embedded clause, (25a) cannot be derived under Arregi's analysis.

10. Given the interpretive and intonational properties of (25b), it seems to me that the matrix phrase 'pentsatzen dut' is somehow topicalized and that this sentence is an instance of a 'right periphery' focus (cf. Ortiz de Urbina (2003), Irurtzun (2005a)).

11. Obviously, the variability in the judgments could be derivative of a dialectal or idiolectal variation among speakers. But, if we seek for a unitary analysis of the data, a proposal under Arregi (2003a)'s terms doesn't seem to be appropriate to account for the cases that show verb-movement in (25), (27) or some of the data reported in Arregi (2003b).

12. Actually, not even (27), since it is a bit marked with the adverb in final position in the pied-piped clause. It would improve with the adverb fronted as in (i) but I will disregard this interesting issue now for the sake of the argument:

- (i) [Bihar [JON]_F etorriko dela] esan diot Mireni.
 Tomorrow Jon come AUX-C^o said AUX Miren-to
 'I told Mary that [Jon]_F will come tomorrow'

13. This doesn't mean that these are instances of V2 as in German. It seems that these are very different phenomena (cf. Ortiz de Urbina (1995) and Uriagereka (1999)).

14. Actually, the analysis of A. Elordieta is a combination of the left periphrastic and the NSR-based approaches (cf. Elordieta (2001) for further details).

15. This is not the only possibility, since some speakers accept also the variant of (30B) with focus-verb adjacency (cf. also Ortiz de Urbina (1983)). As I will propose in the next Section, if we take this focus-verb adjacency to be the result of a pure PF phenomenon (viewing tense as a focal affix) the adjacency of the focus to the uninflected verb could be analyzed as a hypergeneralization, since even the speakers that accept such a configuration have a clear preference for the one in (30B). A more 'syntactic' trigger for this adjacency would be highly problematic.

16. The lack of affixation of the auxiliary to the focus in rightward foci could be derivative of them being somehow 'too far' from each other, arguably, having been spelled out in different steps (cf. Irurtzun (2005b)).

17. Recall that a unary quantifier like 'some' wouldn't induce any truth conditional difference between analogous examples as in (i) and (ii):

- (i) Some whales are mammals.
- (ii) Some mammals are whales.

Thus, unary quantifiers have to be treated as monadic predicates (*cf.* Hornstein & Uriagereka (2002: 124–125)).

18. Formally, this mechanism will be just a label ‘projection’ that takes place for the second time in the same geometrical object.

19. Examples of focused tenses might not be very common but I think this is a matter of information flow (‘informatics’ in the sense of Vallduví (1993)) and not of a restriction in the computational system. Sentences where the ‘new information’ is given by the tense are quite uncommon and need a very contrastive environment to be plausible; however, relevant examples can be constructed in contrastive environments like (i):

- (i) A: I heard that John is married.
- B: No, he WAS married!

Thus, we have to allow for the possibility of focalized tenses.

20. The object probably isn’t *in situ* but in the outer specifier of *vP* for case checking, but let me abstract away from case issues here.

21. Given the “derivational approach to focus structure” presented in Section 3.1. I will assume that the focal head attracts *all* the [+F] featured material (*cf.* Bošković (1999) and Jeong (2003)). Furthermore, this operation of attraction of all the [+F] featured material could be the trigger of the A’ movement involved in fragment answers as those analyzed in Merchant (2004).

22. As will be shown in short, in order to get the desired semantics (and PF), this movement will have to leave no copy behind (or the copy will have to be necessarily deleted). This argument, stipulative as it is, seems to be necessary given that focus movements in Basque show scope-freezing effects where reconstruction is impossible. For instance, the sentence in (i) with a focalized object lacks the reading where the universal quantifier takes scope over the existential one:

- (i) [Txakur bat]_F maite dute haur guztiek. $\sqrt{\exists} > \forall, * \forall > \exists$
 dog one love AUX child all
 ‘All the children love one dog’

23. Note that this QR movement, if overt (see below), could be the trigger for the remnant movement operations argued for in Uribe-Etxebarria (2002) and Ortiz de Urbina (2003) when analyzing “*in situ*”-like Wh constructions and corrective focalizations in Spanish and Basque respectively. Thus, as I argued in Irurtzun (2005a), we could derive both unmarked (XP fronted) and marked (XP “*in situ*”) constructions in a unitary way (*pace* Dominguez (2004)). The asymmetries between both constructions would derive simply from timing differences between the reprojection and Spell Out.

24. Obviously, after QR, some ‘trace conversion’ will have to take place deleting the lower existential quantifier.

25. See Grohmann (2000) and Platzack (2001) for discussion on the different functions of the *vP*, TP and CP domains.

26. As said before, in order to get the V2 effects of long-distance movements we would have to assume that the affixation applies before copy-deletion.

References

- Arregi, K. 2003a. Focus on Basque Movements. PhD dissertation, MIT.
- Arregi, K. 2003b. Clausal pied-piping. In *Natural Language Semantics* 11: 115–143.
- Arregi, K. 2005. Basque is right-headed. Talk delivered at the University of Deusto, Bilbao.
- Artiagoitia, X. 2000. *Hatsarreak eta parametroak lantzen*. Vitoria-Gasteiz: University of the Basque Country & Arabako Foru Aldundia.
- Barwise, J. and R. Cooper. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4: 159–219.
- Boeckx, C. and S. Stjepanović. 2001. Head-ing toward PF. *Linguistic Inquiry* 32 (2): 345–355.
- Bošković, Ž. 1999. On multiple feature checking: Multiple wh-fronting and multiple head movement. In *Working Minimalism*, S.D. Epstein and N. Hornstein (eds), 159–187. Cambridge MA: The MIT Press.
- Brody, M. 1990. Some remarks on the focus field in Hungarian. *UCL Working Papers in Linguistics* 2: 201–225.
- Chomsky, N. 1995a. Bare phrase structure. In *Government and Binding Theory and The Minimalist Program*, G. Webelhuth (ed.), 383–420. Oxford: Blackwell.
- Chomsky, N. 1995b. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000a. *New Horizons in the Study of Language and Mind*. Cambridge: CUP.
- Chomsky, N. 2000b. Minimalist inquiries: The framework. In *Step by Step: Essays in minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Cinque, G. 1993. A null theory of phrase and compound stress. *Linguistic Inquiry* 24: 239–298.
- Davidson, D. 1967. The logical form of action sentences. In *The Logic of Decision and Action*, N. Rescher (ed.). Pittsburgh PA: University of Pittsburgh Press. [Reprinted in D. Davidson, 2001, *Essays on Actions and Events*, 105–122. New York NY: OUP].
- Demirdache, H. and M. Uribe-Etxebarria. 2001. The primitives of temporal relations. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds.), 157–186. Cambridge MA: The MIT Press.
- Dominguez, L. 2004. Mapping Focus: The syntax and prosody of focus in Spanish. PhD dissertation, Boston University.
- Eguzkitza, A. 1986. Topics in the Syntax of Basque and Romance, PhD dissertation. University of California Los Angeles.
- Elordieta, A. 2001. Verb Movement and Constituent Permutation in Basque. PhD dissertation, Leiden University.
- Grohmann, K. 2000. Prolific Peripheries: A radical view from the left. PhD dissertation, University of Maryland.
- Halle, M. and J.-R. Vergnaud. 1987. *An Essay on Stress*. Cambridge MA: The MIT Press.
- Herburger, E., 1998. Presupposition vs. assertion; A Davidsonian account. In *UMOP 21: Proceedings of the workshop on focus*, E. Benedicto, M. Romero and S. Tomioka (eds), 125–141. Amherst MA: GLSA.
- Herburger, E. 2000. *What Counts: Focus and quantification*. Cambridge MA: The MIT Press.
- Higginbotham, J. 1985. On semantics. *Linguistic Inquiry* 16(4): 547–593.
- Higginbotham, J. 2002. Why is sequence of tense obligatory? In *Logical Form and Language*, G. Preyer and G. Peter (eds), 207–227. Oxford: OUP.

- Hornstein, N. and J. Uriagereka. 1999. Labels and projections: A note on the syntax of quantifiers. *University of Maryland Working Papers in Linguistics* 8: 249–270.
- Hornstein, N. and J. Uriagereka. 2002. Reprojections. In *Derivation and Explanation in the Minimalist Program*, S.D. Epstein and T. D. Seely (eds), 107–132. Malden MA: Blackwell.
- Horvath, J. 1995. Structural focus, structural case and the notion of feature-assignment. In *Discourse Configurational Languages*, K.É. Kiss (ed.), 28–64. New York NY: OUP.
- Hualde, J. I. and Ortiz de Urbina, J. 2003. *A Grammar of Basque*, Berlin: Mouton de Gruyter.
- Irurtzun, A. 2003. A derivational approach to the focus structure. Manuscript, University of the Basque Country.
- Irurtzun, A. 2005a. Reprojection & spell out (or vice-versa). Paper presented at the XV. *Colloquium on Generative Grammar*, Universitat de Barcelona, Barcelona.
- Irurtzun, A. 2005b. Structure and derivation of split focalization. In *Proceedings of the ESSLLI Workshop on Discourse Domains & Information Structure*, C. Umbach and C. von Heusinger (eds), 21–33.
- Irurtzun, A. 2006. In progress. The Grammar of Focus at the Interfaces. PhD dissertation, University of the Basque Country.
- Irurtzun, A. and U. Etxeberria. 2004. Prosodic features with semantic interpretation. In *Proceedings of JEL 2004 [Domain[e]s]*, O. Crouzet, H. Demirdache and S. Wauquier-Gravelines (eds), 95–101. Nantes: AAI.
- Jeong, Y. 2003. Multiple wh-fronting in Basque. Manuscript, University of Maryland.
- Kratzer, A. 1996. Severing the external argument from its verb. In *Phrase Structure and the Lexicon*, J. Rooryck and L. Zaring (eds), 109–139. Dordrecht: Kluwer.
- Laka, I. 1990. Negation in Syntax: On the nature of functional categories and projections. PhD dissertation, MIT.
- Laka, I. and J. Uriagereka. 1987. Barriers for Basque and vice-versa. In *Proceedings of NELS 17*, J. McDonough and B. Phunkett (eds), 394–408. Amherst MA: GLSA.
- Larson, R. 1991. The projection of DP (and DegP). Manuscript, State University of New York at Stony Brook.
- Larson, R. and G. Segal. 1995. *Knowledge of Meaning: An introduction to semantic theory*. Cambridge MA: The MIT Press.
- Merchant, J. 2004. Fragments and ellipsis, *Linguistics and Philosophy* 27: 661–738.
- Neeleman, A. and T. Reinhart. 1998. Scrambling and the PF interface. In *The Projection of Arguments: Lexical and compositional factors*, M. Butt and W. Geuder (eds). Stanford CA: CSLI.
- Ortiz de Urbina, J. 1983. Empty categories and focus in Basque. *Studies in the Linguistic Sciences* 13(1): 133–156.
- Ortiz de Urbina, J. 1989. *Parameters in the Grammar of Basque*. Dordrecht: Foris.
- Ortiz de Urbina, J. 1993. Feature percolation and clausal pied-piping. In *Generative Studies in Basque Linguistics*, J. I. Hualde and J. Ortiz de Urbina (eds). Amsterdam: John Benjamins.
- Ortiz de Urbina, J. 1995. Residual verb first and verb second in Basque. In *Discourse Configurational Languages*, K. É. Kiss (ed.), 99–121, New York NY: OUP.
- Ortiz de Urbina, J. 1999. Focus in Basque. In *The Grammar of Focus*, G. Rebuschi and L. Tuller (eds), 311–334. Amsterdam: John Benjamins.
- Ortiz de Urbina, J. 2003. Focus of correction and remnant movement in Basque. In *Erramu Boneta: A festschrift for Rudolph P.G. de Rijk*, J. Lakarra and X. Artiagoitia (eds). Donostia: ASJU.
- Parsons, T. 1991. *Events in the Semantics of English*. Cambridge MA: The MIT Press.

- Platzack, C. 2001. Multiple interfaces. In *Cognitive Interfaces: Constraints on linking cognitive information*, U. Nikkane and E. van der Zee (eds), 21–53. Oxford: OUP.
- Rizzi, L. 1997. The fine structure of the left periphery. In *Elements of Grammar*, L. Haegeman (ed.), 281–337. Dordrecht: Kluwer.
- Rooth, M. 1985. Association with Focus. PhD dissertation, University of Massachusetts at Amherst.
- Rooth, M. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Rooth, M. 1996. Focus. In *The Handbook of Contemporary Semantic Theory*, S. Lappin (ed.), Oxford: Blackwell.
- Schein, B. 1993. *Plurals and Events*. Cambridge MA: The MIT Press.
- Selkirk, E. 1995. Sentence prosody: Intonation, stress and phrasing. In *The Handbook of Phonological Theory*, J. Goldsmith (ed.), 550–569. Oxford: Blackwell.
- Stowell, T. 1996. The phrase structure of tense. In *Phrase Structure and the Lexicon*, J. Rooryck and L. Zaring (eds), 277–291. Dordrecht: Kluwer.
- Uriagereka, J. 1999. Minimal restrictions on Basque movements. *Natural Language and Linguistic Theory* 17:403–444.
- Uribe-Etxebarria, M. 2002. Wh in situ and masked movement. In *Linguistic Variation Yearbook* 2, P. Pica and J. Rooryck (eds), 217–257. Amsterdam: John Benjamins.
- Vallduví, E. 1993. The Informational Component. PhD dissertation, University of Pennsylvania.
- Zubizarreta, M. L. 1998. *Prosody, Focus, and Word Order*, Cambridge MA: The MIT Press.

Symmetry in syntax^{*}

Masakazu Kuno
Harvard University

Abstract

This paper claims that reconstruction obeys a minimality condition just like upward movement such as Wh-movement, Quantifier Raising and A-movement. The strongest interpretation of this claim is that there is no essential difference between upward movement and reconstruction and any theory of grammar that deals with the two operations differently is wrong and should be modified accordingly. I will suggest a representational theory of grammar in which there is no distinction between derivational component and LF representation/component, hence no distinction between upward movement and reconstruction either.

1. Introduction

It is a fact about human language that virtually every sentence contains a mismatch between Phonological Form (PF) and Logical Form (LF): An element is interpreted in a position where it is not pronounced. Such mismatches show up in two varieties. The first variety comes from a variety of upward movement such as A-movement, Wh-movement, Quantifier Raising (QR) and head-movement. For example, in the case of overt Wh-movement, a moving element is typically pronounced in its scope position and unpronounced in a position where it is interpreted as a variable. The other variety is brought about by (radical) reconstruction (e.g., reconstruction of a scrambled phrase in Japanese), by which an element is “moved back” to its base or intermediate position and interpreted there, with the result that the surface position gets no semantic interpretation. In the Principles-and-Parameters approach, many attempts have been made to incorporate constraints on the first type of mismatches into the theory of grammar, and some of such attempts have been crystallized into minimality conditions on movement such as Superiority, Relativized Minimality, the Minimal Link Condition and so on. As compared to many efforts to formalize conditions on upward movement, however, relatively less efforts have been devoted to the investigation of the nature of mismatches of the second type, reconstruction. Thus, it is still an open question whether reconstruction obeys any sort of minimality condition or not (but see Boeckx 2001 who proposes a certain minimality condition on A-movement reconstruction).

This paper claims that reconstruction does obey a minimality condition just like upward movement. Specifically, I would show that the minimality condition that regulates reconstruction is the mirror-image to the minimality condition that restrains upward movement. This suggests that the two minimality conditions imposed on reconstruction and upward movement follow from the same general principle. The strongest interpretation of this suggestion is that reconstruction and upward movement obey the same condition and there is no essential difference between the two operations. If so, the theory of grammar should be symmetrical in the sense that it treats reconstruction and upward movement in the same manner. I will show that symmetrical syntax fares better in a representational theory than in a derivational theory, thereby supporting the former, under the general consideration put force by Brody (2000: 29): “in the better-developed sciences, it is the departures from symmetry rather than the symmetries that are typically taken to be in need of explanation.”

This paper is organized in the following way. Section 2 establishes the empirical basis for the symmetrical grammar by demonstrating that reconstruction obeys a minimality condition on a par with upward movement, which I will refer to as the Minimality Condition on Reconstruction (MCR). In 2.1 and 2.2, we will see that the MCR receives major support from scope and binding facts about double object constructions in English and Japanese. In 2.3, I will show an extension of the MCR to the realm of remnant movement. More specifically, I will demonstrate that the MCR will enable us to derive the well-known constraint on remnant movement, what is called Müller’s Generalization (Müller 1996, 1998). Section 3 discusses implications that MCR has on the theory of grammar. Section 4 concludes the paper.

2. Minimality condition on reconstruction

In order to set up the foundation on which to argue for a representational model of grammar, the first task is to demonstrate that reconstruction obeys a minimality condition, which is formalized in (1).

(1) Minimality Condition on Reconstruction (MCR)

An X-moved element cannot undergo reconstruction across another X-moved element, where X is a variable ranging over the types of movement.

In this section, I will attempt to give empirical support to the MCR. In 2.1, we will take a look at scope facts about the double object construction in English. Bruening (2001) has proposed a quite persuasive account of scope freezing phenomena of this construction, based on the idea that Quantifier Raising obeys Superiority, but a closer inspection spots a loophole in his account, and then I will argue that in order to fill in the loophole, reconstruction of a QRed phrase (i.e., Quantifier Lowering) has to be restrained, as mandated by the MCR. In 2.2, we will turn to the data drawn from Japanese and see that the MCR gains much validity from the scope and binding

facts that involve reconstruction of scrambled phrases. We will also see that there is a mirror-image relation between the pattern of reconstruction of scrambled phrases in Japanese and the pattern of object shift in double object constructions in Icelandic. This can be interpreted as evidence that reconstruction and upward movement is two side of the same coin.

2.1 Quantifier lowering

In the Principles-and-Parameters Approach, it is widely held that some sort of syntactic movement is employed for scope shifting operations such as Quantifier Raising (QR) (e.g., May (1977, 1985)). Recently, the constraints on QR have been deeply discussed. Fox (2000) proposes a condition called Scope Economy, which states that scope shifting operations may apply only if their application yields otherwise unavailable meaning. Another extremely interesting work is done by Bruening (2001), who argues, on the basis of scope data in English double object constructions like (2), that QR obeys Superiority much like multiple Wh-movement in Bulgarian does, as shown in (3).

- (2) John gave some student every book. (some>every, *every>some)

- (3) a. *Koj_i kogo_j e t_i vidjal t_j*
 who whom AUX seen
 ‘Who sees whom?’
 b. **Kogo_j koj_i e t_i vidjal t_j*
 whom who AUX seen

(Rudin 1988:449)

In (3), Superiority forces the two Wh-movement paths to cross so that the hierarchical relation between the two Wh-phrases will not be altered after movement. (See Kitahara (1997) and Richards (1997, 2001) for technical details about how to deduce the effect of Superiority from a locality condition on feature checking and movement.) Bruening points out that the same holds of QR. Thus, example (2) can have an LF structure in (4a), but not one in (4b). (The VP-internal subject trace will be omitted throughout the paper unless its presence is crucial for discussion.)

- (4) a. [_{IP} John [_{VP} some student_i [_{VP} every book_j [_{VP} gave t_i t_j]]]]
 (some>every)
 b. **[_{IP} John [_{VP} every book_j [_{VP} some student_i [_{VP} gave t_i t_j]]]]*
 (every>some)

Even if moving the direct object (DO) every book over the indirect object (IO) some student via QR changes the truth conditions of the sentence in conformity to Fox’s Scope Economy, Superiority disallows the non-local QR of the DO, hence inverse scope is unavailable.

At this point, it is reasonable to ask, concerning example (2), why it is impossible to first apply QR to both IO and DO up to the IP-adjoined position without altering their hierarchical relations, as in (5a), and then apply Quantifier Lowering (QL) to the IO alone, as in (5b), which would yield inverse scope.

- (5) a. $[_{IP} \text{ some student}_i [_{IP} \text{ every book}_j [_{IP} \text{ John } [_{VP} t_i [_{VP} t_j [_{VP} \text{ gave } t_i t_j]]]]]]]$
 b. $*[_{IP} e_i [_{IP} \text{ every book}_j [_{IP} \text{ John } [_{VP} \text{ some student}_i } [_{VP} t_j [_{VP} \text{ gave } t_i t_j]]]]]]]$
 |-----Quantifier Lowering-----| (every>some)

This derivation obeys Superiority. How do we rule it out? One can resort to Scope Economy, which bans the QR of the two objects to the IP adjoined position since it yields the same meaning as the QR of them to the VP-adjoined position. The hypothetical derivation therefore does not pose a problem to Bruening's Superiority-based account. Indeed, Bruening also attributes the impossibility of reconstructing a QRed phrase to Scope Economy.

To avoid an objection from Scope Economy, let us consider the example in (6), which contains three scope-bearing elements, the intensional verb *want*, and the two quantified objects of *give*.

- (6) John wanted to give a linguist every paper Mary wrote.

(6) does not allow the wide scope reading for universal. However, a hypothetical derivation like the one in (5) that involves QR and QL cannot be ruled out for this example on the grounds of Scope Economy. The two quantified objects can undergo QR either to the lower VP-adjoined position, as in (7a), or to the higher VP-adjoined position, as in (7b).

- (7) a. $[_{IP} J. [_{VP} \text{ wanted to } [_{VP} \text{ a linguist}_i [_{VP} \text{ every paper M. wrote}_j [_{VP} \text{ give } t_i t_j]]]]]]]$
 (want>a>every)
 b. $[_{IP} J. [_{VP} \text{ a linguist}_i [_{VP} \text{ every paper M. wrote}_j [_{VP} \text{ wanted to } [_{VP} t_i [_{VP} t_j [_{VP} \text{ give } t_i t_j]]]]]]]]]$ (a>every>want)

Once (7b) is ruled in, the question arises why the IO alone cannot undergo QL from the higher VP-adjoined position, as shown in (8).

- (8) $[_{IP} J. [_{VP} e_i [_{VP} \text{ every paper M. wrote}_j [_{VP} \text{ wanted to } [_{VP} \text{ a linguist}_i } [_{VP} t_j [_{VP} \text{ give } t_i t_j]]]]]]]]]$
 |-----Quantifier Lowering-----|
 (every>want>a)

Notice that every QR operation involved in (8) respects Superiority, and the application of QL satisfies Scope Economy since it alters the truth conditions of the sentence. The truth conditional difference between (7b) and (8) is obvious, as the latter would allow not only the *de dicto* interpretation of *a linguist* but also a wide scope reading for universal.

Since example (6) does not have the reading produced by LF representation (8), there must be something else wrong with this derivation. One obvious solution is to

stipulate that QL does not exist, but since we cannot a priori either prove or disprove the existence of QL, stipulation had better be avoided. Rather I'd like to suggest that a QRed phrase cannot undergo QL across another QRed phrase as a special case of the MCR given in (1), which seems to be more interesting a possibility if true.

Admittedly, the argument based on English scope facts are inconclusive because QR is a covert operation and QL is as likely to exist as it doesn't. In order to verify the validity of the MCR, we should therefore look at a type of movement, which is overt, which can change scope relations, and which allows reconstruction quite freely. Japanese scrambling best qualifies for these criteria. We will now turn to the data drawn from Japanese.

2.2 Reconstruction of scrambled phrases in Japanese

As is well known, Japanese is a "scope rigid" language in the sense that non-scrambled sentences do not exhibit scope ambiguity, and only surface scope obtains. As (9a) shows, in the non-scrambled structure, the subject unambiguously scopes over the object. However, when the object is scrambled to the left of subject, as in (9b), the object can take wide scope, yet it is still able to take scope under the subject.

- (9) a. [_{Subj} *Dareka ga*] [_{Obj} *daremo o*] *sonkeisiteiru*
 someone NOM everyone ACC admire
 'Someone admires everyone.' (some>every, *every>some)
- b. [_{Obj} *Daremo o*] [_{Subj} *dareka ga*] *t_{Obj} sonkeisiteiru*
 (some>every, every>some)

Though the availability of a wide scope reading for existential in examples like (9b) is often taken as evidence that scrambled phrases may be freely reconstructed in Japanese, we have to use caution because in a sentence that contains an existentially quantified DP and a universally quantified DP, the set of situations in which the wide scope reading for existential is true is the subset of situations where the wide scope reading for universal is true. In other words, the truth of the wide scope reading for universal entails the truth of the wide scope reading for existential. Therefore, in order to prove that scrambled phrases can be reconstructed in Japanese, we need to look at the case where a reconstructed reading does not obtain as a result of entailment. (10) is a case in point.

- (10) a. [_{Subj} *Daremo ga*] [_{Obj} *dareka o*] *sonkeisiteiru*
 everyone NOM someone ACC admire
 'Everyone admires someone.' (some>every, every>some)
- b. [_{Obj} *Dareka o*] [_{Subj} *daremo ga*] *t_{Obj} sonkeisiteiru*
 (some>every, every>some)

(10a) contains a universally quantified subject and an existentially quantified object, and the non-scrambled structure shows scope ambiguity in spite of the scope rigidity

nature of this language due to entailment. More important a point is that when the object is scrambled in front of the subject, the wide reading for universal is still available, as shown in (10b). Since the truth of the wide scope reading for existential does not entail the truth of the wide scope reading for universal, the availability of wide scope reading for universal in this instance can be taken as genuine evidence that scrambled phrases may undergo reconstruction in Japanese.

With this in mind, let us consider scope data in double object constructions.

- (11) a. *John ga* [_{IO} *dareka ni*] [_{DO} *daremo o*] *syookaisita*
 John NOM someone DAT everyone ACC introduced
 ‘John introduced everyone to someone.’ (some>every, *every>some)
- b. [_{DO} *daremo o*] *John ga* [_{IO} *dareka ni*] *t*_{DO} *syookaisita*
 (every>some, some>every)
- c. [_{IO} *dareka ni*] [_{DO} *daremo o*] *John ga* *t*_{IO} *t*_{DO} *syookaisita*
 (some>every, *every>some)

(Yatsushiro 1996)

(11a) shows that in the non-scrambled structure, the IO has to take wide scope over the DO (Hoji 1985). When the DO is scrambled to the left of the subject as in (11b), the DO can take wide scope as well as narrow scope due to reconstruction or entailment in this case. However, (11c) indicates that when both IO and DO are scrambled without changing their hierarchical relation or linear order, the IO unambiguously takes wide scope just as in non-scrambled structure (11a) (Yatsushiro 1996). This indicates that in (11c), the scrambled IO alone cannot undergo reconstruction across the scrambled DO so that (11c) will have the same structure as (11b) at LF. Given that scrambled phrases in Japanese can freely undergo reconstruction, as seen in the examples in (10) and note 7, we have to conclude that reconstruction of scrambled phrases obeys the MCR. Consequently, the generalization in (12) obtains.¹

- (12) A scrambled phrase cannot undergo reconstruction across another scrambled phrase.

It deserves to note that we can draw a neat analogy between the MCR and the Relativized Minimality effect observed in object shift in double object constructions in Icelandic, which exhibits the following pattern: Either the IO alone or both IO and DO may be shifted as shown in (13b) and (13c), respectively, but the DO alone cannot be shifted because moving the DO across the IO violates Relativized Minimality, as indicated by the ill-formedness of (13d).

- (13) a. *Ég lána ekki* [_{IO} *Maríu*] [_{DO} *bækur*]
 I lend not Maria books
 ‘I did not lend books to Maria.’
- b. *Ég lána* [_{IO} *Maríu*] *ekki t*_{IO} [_{DO} *bækur*]
- c. *?Ég lána* [_{IO} *Maríu*] [_{DO} *bækur*] *ekki t*_{IO} *t*_{DO}

- d. *Ég lána [_{DO} bækurar] ekki [_{IO} Maríu] t_{DO}
(Collins and Thráinsson 1996)

Interestingly, the mirror image to this pattern can be observed in reconstruction of scrambled phrases, which is schematically shown in (14).

- (14) [XP [YP ... t_{XP} t_{YP} ...]] (XP and YP are scrambled)

In the structure that involves multiple scrambling as in (14), the outer scrambled phrase XP cannot be reconstructed across the inner scrambled phrase YP (just like the DO cannot be shifted across the IO (see (13d)), but XP can be reconstructed if YP is also reconstructed (just like the DO can be shifted if the IO is also shifted (see (13c)) whereas YP alone can be reconstructed, with XP remaining in the scrambled position (just like the IO alone can be shifted, with the DO staying in situ (see (13b)).

The data in (15) prove that there is an asymmetry in the availability of reconstruction between the outer scrambled phrase and the inner one exactly in the way it is predicted by the analogy between the MCR and the Relativized Minimality effect on object shift in Icelandic.

- (15) a. [_{Subj} Sukunakutomo hito.tu no gengo gakka_i ga] [_{IO} soko_i no gakusei ni]
at.least 1 GEN linguistics dept NOM it Gen student DAT
[_{DO} dono bumpoo riron mo] osieteiru
every grammar theory also teach
'At least one linguistics department_i teaches its_i students every theory of
grammar.' (at least 1>every, *every>at least 1)
- b. [_{DO} Dono bumpoo riron mo] [_{Subj} sukunakutomo hito.tu no gengo gakka_i ga]
[_{IO} soko_i no gakusei ni] t_{DO} osieteiru
(at least 1>every, every>at least 1)
- c. [_{IO} Soko_i no gakusei ni] [_{DO} dono bumpoo riron mo]
[_{Subj} sukunakutomo hito.tu no gengo gakka_i ga] t_{IO} t_{DO} osieteiru
(at least 1>every, ?*every>at least 1)
- d. [_{DO} Dono bumpoo riron mo] [_{IO} soko_i no gakusei ni]
[_{Subj} sukunakutomo hito.tu no gengo gakka_i ga] t_{IO} t_{DO} osieteiru
(at least 1>every, every>at least 1)

In (15a), the existentially quantified subject unambiguously scopes over the universally quantified DO and successfully binds the pronoun soko contained within the IO. (15b) indicates that when the DO is scrambled to the left of the subject, universal can take wide scope. However, if the IO is scrambled further to the left of the scrambled DO, as in (15c), it becomes very hard to get a wide scope reading for universal, to which the MCR gives the following explanation: Since the IO contains a bound pronoun, it has to be reconstructed into the c-command domain of the binder under the assumption that pronominal/variable binding takes place at LF; in order for the IO to reconstruct, the DO also has to reconstruct to meet the MCR; consequently, (15c)

will have the same structure as (15a) at LF, hence the absence of wide scope reading for universal. In (15d), on the other hand, where the IO is the inner scrambled phrase, it can undergo reconstruction by itself, and the DO can remain in the scrambled position so that universal can take wide scope.

The data in (16), in which the bound pronoun *soko* is contained within the DO rather than the IO, illustrate the same point.

- (16) a. $[_{Subj} \text{Ikutuka no geinoo purodakusyon}_i \text{ga}] \ [_{IO} \text{dono terebikyoku ni mo}]$
 some GEN theatrical agency NOM every TV.station Dat also
 $[_{DO} \text{soko}_i \text{no sinjin kasyu o}] \ \text{syookaisita}$
 it GEN new singer ACC introduced
 ‘Some theatrical agency_i introduced its_i new singers to every TV stations.’
 (some>every, ?*every>some)
- b. $[_{IO} \text{Dono terebikyoku ni mo}] \ [_{Subj} \text{ikutuka no geinoo purodakusyon}_i \text{ga}] \ t_{IO}$
 $[_{DO} \text{soko}_i \text{no sinjin kasyu o}] \ \text{syookaisita}$
 (some>every, every>some)
- c. $[_{DO} \text{Soko}_i \text{no sinjin kasyu o}] \ [_{IO} \text{dono terebikyoku ni mo}]$
 $[_{Subj} \text{ikutuka no geinoo purodakusyon}_i \text{ga}] \ t_{IO} \ t_{DO} \ \text{syookaisita}$
 (some>every, ?*every>some)
- d. $[_{IO} \text{Dono terebikyoku ni mo}] \ [_{DO} \text{soko}_i \text{no sinjin kasyu o}]$
 $[_{Subj} \text{ikutuka no geinoo purodakusyon}_i \text{ga}] \ t_{IO} \ t_{DO} \ \text{syookaisita}$
 (some>every, every>some)

(16a) is a non-scrambled structure where the existentially quantified subject (almost) unambiguously takes wide scope and binds the bound pronoun contained within the DO. (16b) shows that scrambling of the IO gives wide scope to universal. However, when the DO is scrambled to the left of the scrambled IO, as in (16c), the wide scope reading for universal becomes much harder to get than in (16b). This is because the DO that contains the bound pronoun has to reconstruct beneath the subject, and the MCR dictates that in order for the DO to reconstruct, the IO reconstruct too. As a result, the IO will not c-command the subject at the end point of LF in (16c), and the wide reading for universal is rendered unavailable. However, when the DO shows up to the right of the IO as in (16d), the DO can reconstruct by itself, and the IO may remain in the surface position at LF, giving rise to the wide scope reading for universal.

We have seen that a scrambled phrase cannot undergo reconstruction across another scrambled phrase, as predicted by the MCR. We will now see that the MCR makes another prediction: Given the schematic structure in (17), where the outer element XP has been moved by scrambling and the inner element YP has undergone a type of movement other than scrambling, XP can undergo reconstruction across YP, irrespective of whether YP reconstructs or not.

- (17) [XP [YP ... t_{XP} t_{YP} ...]] (XP is scrambled; YP is moved by non-scrambling.)

The examples in (18) bear out the prediction.

- (18) a. * $[_{Subj} Soitu_i no maneejaa ga] [_{IO} ikutuka no terebikyoku ni]$
 her GEN manager NOM some GEN TV.station Dat
 $[_{DO} hotondo no sinjin kasyu_i o] syookaisita$
 most GEN new singer ACC introduced
 ‘Her_i manger introduced most new singers_i to some TV stations.’
- b. $[_{Subj(DO)} Hotondo no sinjin kasyu_i ga] [_{Agt} soitu_i no maneejaa niyotte]$
 most GEN new singer NOM her GEN manager by
 $[_{IO} ikutuka no terebikyoku ni] t_{Subj(DO)} syookaisa reta$
 some GEN TV.station DAT introduced Passive
 ‘Most new signers_i were introduced to some TV stations by her_i manger.’
 (most>some, some>most)
- c. $[_{IO} Ikutuka-no terebikyoku-ni] [_{Subj(DO)} hotondo-no sinjin kasyu_i-ga]$
 $[_{Agt} soitu_i-no maneejaa-niyotte] t_{IO} t_{Subj(DO)} syookaisa-reta$
 (most>some, some>most)

(18a) is ungrammatical under the bound reading of *soitsu* contained within the subject because the bound pronoun is outside the c-command domain of its binder, i.e., the direct object. (18b) shows that the bound reading is made available if the structure is passivized. As a result of passivization, the DO is promoted up to the subject position and gets a nominative Case marker, and the external argument is demoted down to the postpositional agent phrase. In this instance, the subject can take scope over the IO, and the vice versa. With this in mind, let us examine (18c), where the IO is scrambled to the left of the derived subject. This is a case of the schematic structure given in (17). Witness that this example allows the wide scope reading for *hotondo* “most” without destroying the bound reading. This means that the scrambled IO can undergo reconstruction, with the subject staying in the surface position. If the MCR required that in order for the scrambled IO to reconstruct, the A-moved subject reconstruct as well, then the wide reading for *most* would wrongly be predicted to be incompatible with the bound reading. Therefore, we can draw the conclusion that the MCR applies to the reconstruction of one element across another only when both elements have been moved by the same type of movement. Again, we can find an analogue of this in the domain of upward movement: Different types of movements do not compete for a minimality condition. Thus, it is possible for Wh-movement to move across another A-moved element.

- (19) What_i does John_j seem t_j to have lost t_i

To summarize, reconstruction of scrambled phrases reveals a mirror-image pattern to object shift in Icelandic double object constructions. In the case of reconstruction, an outer scrambled phrase cannot undergo reconstruction unless an inner scrambled phrase also reconstructs. In the case of object shift, a lower phrase (DO) cannot be

shifted unless a higher phrase (IO) is also shifted. We have also seen that a scrambled phrase may undergo reconstruction across another phrase if the latter has been moved by a different kind of movement than scrambling, just like Wh-movement can move across another A-moved element. These observations not only lend much validity to the MCR per se but also suggest that the MCR and the minimality conditions on upward movement should follow from some common principle. This in turn suggests that the theory of grammar should deal with upward movement and reconstruction in a uniform way.

2.3 Remnant movement

2.3.1 Deriving Müller's generalization

In this subsection, I will demonstrate that the MCR has another advantage in the analysis of remnant movement: It enables us to derive a widely held constraint on remnant movement known as Müller's Generalization given in (20).

(20) Müller's Generalization:

A configuration "[_{YP}...t_{XP}]...XP...t_{YP}" is allowed only if XP and YP are moved by a different movement rule.

As is shown by his seminal works such as Müller (1996; 1998), this generalization holds of a reasonable range of cases, especially scrambling in German. (21) exemplify a typical contrast that the generalization is designed to capture.

- (21) a. **dass* [_{VP} t_{Obj} *gelesen*] [_{Obj} *das Buch*] *keiner* t_{VP} *hat*
 that read the book no one has
 'That no one has read the book.'
- b. [_{VP} t_{Obj} *gelesen*] *hat* [_{Obj} *dass Buch*] *keiner* t_{VP}
 read has the book no one
 'None has read the book.'

(Müller 1996)

(21a) is derived first by scrambling of the object *dass Buch* "the book" out of the VP, which renders the VP a remnant, and then by scrambling of that remnant. Since both the remnant (VP) and the antecedent of the unbound trace (*dass Buch*) have been moved by scrambling, the resulting structure violates the generalization. On the other hand, the structure in (21b) satisfies the generalization because it is derived first by scrambling of *dass Buch* "the book" out of the VP, and then by topicalization of the remnant VP.

Japanese scrambling is no exception to Müller's generalization, as illustrated in (22).

- (22) a. *John ga Mary ni* [_{CP} *Taro ga* [_{Obj} *Hanako o*] *nagutta to*] *itta*
 John NOM Mary DAT Taro NOM Hanako ACC hit COMP said
 'John said to Mary that Taro hit Hanako.'

- b. [_{Obj} *Hanako o*] *John ga Mary ni* [_{CP} *Taro ga t_{Obj} nagutta to*] *itta*
 c. [_{CP} *Taro ga* [_{Obj} *Hanako o*] *nagutta to*] *John ga Mary ni t_{CP} itta*
 d. * [_{CP} *Taro ga t_{Obj} nagutta to*] [_{Obj} *Hanako o*] *John ga Mary ni t_{CP} itta*

(22a) is a non-scrambled structure, from which it is possible to scramble either the embedded object *Hanako-o* ‘Hanako-Acc,’ as in (22b), or the embedded clause, as in (22c). However, it is impossible to apply these two instances of scrambling at a time, which produces the ill-formed structure given in (22d). This structure is derived first by applying long-distance scrambling to the embedded object, which turns the embedded clause into a remnant, and then by applying scrambling to that remnant. The outcome violates Müller’s Generalization.

Now a deeper question should be addressed: Why does Müller’s Generalization hold? A traditional account proposed in generative syntax on Japanese for the ill-formedness of structures like (22d) is that scrambling of a remnant yields a structure that violates the Proper Binding Condition (PBC) given in (23).

- (23) Proper Binding Condition (To be replaced):
 Traces must be bound at S-Structure.

There are two problems with a PBC-based account, however. First, although the PBC correctly rules out example (22d), it incorrectly rules out a well-formed instance of remnant movement like (21b) as well. This problem has not been noted in the literature on Japanese syntax until recently (Hiraiwa (2002), Kuno (2002a,b), Takahashi (2001)) because a grammatical case of remnant movement was not found in this language. In fact, Japanese has a well-formed instance of remnant movement. First, consider the data in (24).

- (24) a. *John ga* [_{CP} [_{Subj} *Hanako o*] *kasikoi to*] *omotteiru*
 John NOM Hanako ACC intelligent COMP consider
 ‘John considers that Hanako is intelligent.’
 b. [_{Subj} *Hanako o*] *John ga* [_{CP} *t_{Subj} kasikoi to*] *omotteiru*
 c. [_{CP} [_{Subj} *Hanako o*] *kasikoi to*] *John ga t_{CP} omotteiru*
 d. ?* [_{CP} *t_{Subj} kasikoi to*] [_{Subj} *Hanako-o*] *John-ga t_{CP} omotteiru*

(24a) represents the non-scrambled structure of an Exceptional Case Marking (ECM) construction in Japanese, in which the downstairs subject *Hanako-o* ‘Hanako-Acc’ is assigned an Accusative Case from the matrix verb. As shown in (24b-c), either the ECM subject or the embedded clause can be scrambled. But it is impossible to apply these two instances of scrambling at once as is indicated by the degraded status of (24d), where the outer scrambled CP is a remnant that contains an unbound trace of the scrambled ECM subject. This structure violates Müller’s Generalization and can also be ruled out by the PBC.

Let us now consider the examples in (25).

- (25) a. [_{Subj} Hanako ga] John niyotte [_{CP} t_{Subj} kasikoi to] omowareteiru
Hanako NOM John by intelligent COMP consider.Pass
'(Lit) Hanako is considered by John that (she) is intelligent'
- b. [_{CP} t_{Subj} kasikoi to] [_{Subj} Hanako ga] John niyotte t_{CP} omowareteiru

(25a) is a passive counterpart of (24a), in which the downstairs subject has undergone A-movement into the upstairs subject position and made the lower clause a remnant. Notice that (25b) indicates that the remnant CP can be scrambled to the left of the A-moved subject. The structure meets Müller's Generalization and is grammatical, but the PBC would incorrectly rule it out. Hence, at one word, the PBC is too strong to derive Müller's Generalization.

The second problem with a PBC-based account is that under the view that Japanese scrambling allows reconstruction freely, it was considered puzzling even in a pre-Minimalist framework why the PBC cannot be satisfied by reconstruction of a remnant at LF. In the Minimalist Program that attempts to eliminate the S-Structure as a level of linguistic representation, the S-Structure character of the PBC is not merely a puzzle but a real problem.

Once it is established that the MCR is in place in grammar, the above two problems with a PBC-based account will disappear. Let us first assume that the PBC is an LF condition.

- (26) Proper Binding Condition:
Traces must be bound at LF.

This eliminates the second problem straightforwardly. Then, how do we account for the ill-formedness of structures like (21a) and (22d)? The MCR gives the following answer to this question. Consider (27), which illustrates the structure of (22d).

- (27) [_{CP} Taro NOM t_{Obj} hit COMP] [_{Obj} Hanako ACC] John-NOM Mary-DAT t_{CP} said
|-----*Reconstruction-----|

Given that the PBC is an LF condition, it follows that the remnant CP has to undergo reconstruction to satisfy the condition at LF. The MCR dictates that in order for the outer scrambled element (the remnant CP) to reconstruct across the inner scrambled element (Hanako-Acc), the latter also reconstruct. However, the inner scrambled element has no place to reconstruct to because its launching site is contained in the outer scrambled element and there is no c-command relation between the inner scrambled phrase and its launching site. Reconstruction of the inner scrambled phrase into its original position counts as an illicit sideward movement, and reconstruction of the outer scrambled phrase across the inner one violates the MCR. If no reconstruction takes place, the PBC is violated. Hence, there is no way out, and this is why it is impossible to apply scrambling to a remnant that contains a trace left by another instance of scrambling.

Then, how do we rule in well-formed instances of remnant movement such as (21b) and (25b)? The answer is that because the remnant and the antecedent of the unbound trace have been movement by a different movement, the former can be reconstructed across the latter without violating the MCR. Recall that the MCR restrains reconstruction of one element across another only if both have been moved by the same type of movement, as we saw in the previous section based on the data in (18). (28) illustrates the LF reconstruction process of example (25b).

- (28) [_{CP} t_{Subj} intelligent COMP] [_{Subj} Hanako NOM] John by t_{CP} consider.Passive
 |-----/Reconstruction-----/

The scrambled CP can be reconstructed across the A-moved subject so as to meet the PBC.

The combination of the PBC as an LF condition with the MCR correctly distinguishes between the ill-formed instances of remnant movement and the well-formed ones. This in effect derives Müller's Generalization, repeated in (29).

- (29) Müller's Generalization:
 A configuration "[_{YP}...t_{XP}...]...XP...t_{YP}" is allowed only if XP and YP are moved by a different movement rule.

The PBC mandates that all kinds of remnants (YP) undergo reconstruction across the binder of the unbound trace (XP). However, when YP and XP have been moved by the same type of movement, XP is forced to undergo reconstruction into YP by virtue of the MCR, which necessarily results in an illicit sideward movement. Therefore, in order for reconstruction of YP to be exercised successfully, YP and XP must have been moved by a different movement rule, in which case the MCR does not apply to the reconstruction process. Since Müller's Generalization can be deduced from the MCR in tandem with the PBC, to the extent that the generalization is maintainable, it can be interpreted as evidence for the MCR.

2.3.2 *A competing proposal*

It is worth noting that Kitahara (1997), Koizumi (1994), Sauerland (1999), and Takano (1994) have made a proposal that is comparable with the present one in deriving Müller's Generalization. Roughly speaking, they propose, assuming the framework presented by Chomsky (1993, 1995), that Müller's Generalization can be deduced from a minimality condition on upward movement, a version of which is given (30).

- (30) XP can move to the Specifier of F only if XP is the closest movable element to the Specifier of F. XP is not the closest movable element to the Specifier of F if there is YP that is movable to the Specifier of F and YP either dominates or c-commands XP.

Let us take a brief look at their proposal using the schemata in (31).

- (31) a. $[_{FP1} XP F_1 \dots [_{YP} \dots t_{XP} \dots]]$
 b. $[_{FP2} [_{YP} \dots t_{XP} \dots] F_2 \dots [_{FP1} XP F_1 \dots t_{YP}]]$

When the remnant (YP) and the antecedent of the unbound trace (XP) are moved by the same type of movement (which means that YP and XP compete for the Specifier position of the same head), the minimality condition in (30) is violated twice. The first violation is caused at the stage in (31a), where XP moves out of YP to the Spec- F_1 in spite of the presence of YP that dominates XP and thus is a closer movable element to the Spec- F_1 . The second violation occurs in the stage in (31b), in which YP moves over XP to the Spec- F_2 , but this time XP is closer to the Spec- F_2 because XP c-commands YP. The two violations of the minimality condition degrade the structure severely. This explains why XP and YP must be moved by a different movement rule. In that case, they do not compete for the landing site in either derivational stage. As a consequence, Müller's Generalization is derived.

Their proposal is the opposite to the present one in that Müller's Generalization is derived from the minimality condition on upward movement rather than the one on reconstruction. At first sight, these two proposals may seem indistinguishable from each other, but it is not the case. Considering that the vast majority of evidence for Müller's Generalization comes from the scrambling data, it is necessary for them to verify the assumption that scrambling obeys a minimality condition on a par with normal sorts of upward movement. However, there is no compelling evidence in favor of the assumption that underlies their proposal. Rather, counterevidence is much easier to find. Examples (32) are constructed on the basis of Fukui and Saito's (1998) data, which show that scrambling is not sensitive to a minimality condition.

- (32) a. John ga Hanako ni_{[CP} Taro ga nihon e kaetta to] itta
 John NOM Hanako DAT Taro NOM Japan to went.back COMP said
 'John said to Hanako that Taro had gone back to Japan.'
 b. Hanako-ni_i [_{CP} Taro-ga nihon-e kaetta to] John-ga t_i t_{CP} itta
 c. [_{CP} Taro-ga nihon-e kaetta to] Hanako-ni_i John-ga t_i t_{CP} itta

(32a) is a non-scrambled structure, and the other two examples show that both the matrix argument *Hanako-ni* 'Hanako-Dat' and the embedded clause can be scrambled in either order. If scrambling obeyed a minimality condition like the one in (30), one of the scrambled structures would wrongly be ruled out. It is thus reasonable to conclude that scrambling does not obey a minimality condition.¹ This means that the rival proposal has no independent grounds for explaining the core cases covered by the generalization. On the other hand, my proposal is built upon independent evidence that reconstruction of a scrambled phrase obeys the MCR. It is therefore clear that my proposal is superior to theirs as far as the core scrambling data are concerned.

3. Implications

I have so far argued that reconstruction obeys a minimality condition just like upward movement, which is formulated as the Minimality Condition on Reconstruction reproduced in (33).

(33) Minimality Condition on Reconstruction (MCR)

An X-moved element cannot undergo reconstruction across another X-moved element, where X is a variable ranging over the types of movements.

Let us now consider what implications the MCR has on the theory of grammar. As we saw in section 2.2, the MCR exhibits the mirror image to Relativized Minimality. This implies that the two minimality conditions imposed on reconstruction and upward movement follow from the same general principle (Call it P). The strongest implication of this suggestion is that reconstruction and upward movement obey the same condition and there is no essential difference between the two operations. If so, the theory of grammar should be symmetrical in the sense that it treats reconstruction and upward movement in the same manner. Symmetrical grammar is preferable because we do not have to stipulate differences between upward movement and reconstruction, an important step toward an explanatory adequate theory of grammar. Accordingly, any theory that is not symmetric should be modified.

However, there is no straightforward way to modify the standard derivational theory, which involves the derivational component to handle upward movement and the LF component to accommodate reconstruction. As long as upward movement and reconstruction take place in two different components, P has to be stated redundantly in both of them because there is no reason why two different components should obey the same principle (i.e., modularity).

The redundancy problem with a derivational model will not arise in a theory in which the distinction between derivation component and LF is eliminated, hence no distinction between upward movement and reconstruction either. In such a theory, syntactic relations borne by movement and reconstruction are expressed by means of chains and the minimality conditions on movement and reconstruction are taken as constraints imposed on the well-formedness of interface representations. This theory is essentially the same as representational theories as is proposed by Rizzi (1986) and Brody (1995). In this paper, I cannot go into the details of the representational model for reasons of space and would like the reader to refer to Kuno (2004) for concrete proposals.

4. Conclusion

In the history of generative grammar, many attempts have been made to elucidate minimality conditions on upward movement, and some of these attempts have given

birth to the core principles of the theory of grammar in each era, such as the Superiority Condition of Chomsky (1973), Relativized Minimality of Rizzi (1990), the Minimal Link Condition of Chomsky (1995). In the current Minimalist theory, minimality conditions on upward movement are considered as constraints imposed on the establishment of feature-checking relation and the follow-up movement operation, and such constraints are regarded as incarnations of the general economy condition operative in the faculty of human language. This view was first proposed by Chomsky (1993) and has later been defended and developed by Bošković (1997, 1998), Chomsky (1995, 2000), Kitahara (1997), Richards (1997, 2001) and many others. While the economy-based theory of the minimality condition has considerably deepened our understanding of the nature of human language faculty, it has strengthened the derivational character of the computational system. Computation needs to be derivational; otherwise, the economy-based theory of the minimality condition cannot simply be formalized.

The economy-centered derivational theory implies that upward movement behaves differently from reconstruction with respect to the way it obeys the minimality condition, under the assumption that reconstruction is an operation onto the LF representation that is the output of derivation. However, what we have seen is the opposite: Reconstruction obeys the minimality condition just like upward movement such as Wh-movement, QR, and object shift. This observation suggests that the theory of grammar should be symmetrical in the sense that it deals with upward movement and reconstruction in essentially the same manner. I have shown that the symmetrical grammar does not fit with the derivational theory for reasons of technicality and theoretical elegance. As an alternative to the derivational theory, I have suggested an outline of a representational theory that is able to express syntactic relations borne by upward movement and reconstruction in the same fashion. To the extent that the representational theory is maintainable, it weakens the significance of derivational economy in the theory of grammar. (This does not mean that economy plays no role in the theory of grammar. In fact, the present theory matches economy conditions that play a role in the interface representations, and it is possible to interpret the Chain Conditions as an “interface economy” condition.)

Naturally, many questions remain with the proposed representational theory, but I hope that I have established some solid grounds for representational theories as well as offered some severe questions that derivational theories have to answer.

Notes

* I would like to thank Cedric Boeckx, Naoki Fukui, James Huang, Hironobu Kasai, Takaomi Kato, Shigeru Miyagawa, Alun Munn, Masaya Yoshida, and Akira Watanabe for valuable discussion and helpful suggestions. Earlier versions of this paper were presented at 2nd East Coast 5 universities Syntax Workshop at University of Maryland (March 2004), 2nd Theoretical

East Asian Linguistics workshop at National Tsing Hua University (June 2004), Strategies of Quantification at University of York (July 2004), a colloquium at Sapporo University (July 2004), and 29th Penn Linguistics Colloquium (February 2005). I am grateful to the audience in these places. Needless to say, the responsibility for remaining errors is mine.

1. Sauerland and Elbourne (2002) derive the same generalization from Yatsushiro's data and try to explain it in the standard T-model framework armed with PF-movement. However, as is shown in detail by Kuno (2004, To appear), there is a fatal drawback with their account.

2. Sauerland's (1999) argues that cases like (32) do not necessarily argue against the sensitivity of scrambling to a minimality condition. He argues that violation of the minimality condition can be avoided by assuming that two scrambled phrases first form multiple specifiers from which either of the two undergoes further scrambling, with the aid of an ancillary assumption that the elements in the specifiers of the same head are equidistant from outside. However, this solution seems to void his explanation of Müller's Generalization because it will incorrectly legitimize the derivation illustrated in (i), where the XP is first scrambled to the Spec-FP1, making YP a remnant (i-a), then the remnant YP is scrambled to the inner Spec-FP1, which render XP and YP equidistant from a higher head (i-b), and finally YP is scrambled to the Spec-FP2 (i-c).

- (i) a. $[_{FP1} XP F_1 \dots [_{YP} \dots t_{XP} \dots]]$
 b. $[_{FP1} XP [_{FP1} [_{YP} \dots t_{XP} \dots] F_1 \dots t_{YP}]]$
 c. $[_{FP2} [_{YP} \dots t_{XP} \dots] F_2 \dots [_{FP1} XP [_{FP1} t_{YP} F_1 \dots t_{YP}]]]$

There is nothing wrong with this derivation. Hence, Sauerland loses his explanation. See Kuno (To appear) for details.

References

- Boeckx, C. 2001. Scope reconstruction and A-movement. *Natural Language and Linguistic Theory* 19: 503–548.
- Brody, M. 1995. *Lexico-Logical Form: A radically minimalist approach*. Cambridge MA: The MIT Press.
- Brody, M. 2000. Mirror theory: Syntactic representation in perfect syntax. *Linguistic Inquiry* 31: 29–56.
- Bruening, B. 2001. QR obeys superiority: Frozen scope and ACD. *Linguistic Inquiry* 32: 233–273.
- Chomsky, N. 1993. A minimalist program for linguistic theory. In *The View from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, K. Hale and S. J. Keyser (eds), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 1995. Categories and transformation. In *The Minimalist Program*, N. Chomsky, 219–394. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Collins, C. and H. Thráinsson. 1996. VP-internal structure and object shift in Icelandic. *Linguistic Inquiry* 27: 391–444.
- Fiengo, R. 1977. On trace theory. *Linguistic Inquiry* 8: 35–61.

- Fox, D. 2000. *Economy and Semantic Interpretation*. Cambridge MA: The MIT Press.
- Fukui, N. and M. Saito. 1998. Order in phrase structure and movement. *Linguistic Inquiry* 29: 439–474.
- Hoji, H. 1985. Logical Form Constraints and Configurational Structure in Japanese. PhD dissertation, University of Washington.
- Kitahara, H. 1997. *Elementary Operations and Optimal Derivations*. Cambridge MA: The MIT Press.
- Koizumi, M. 1994. Layered specifiers. *Proceedings of NELS 24*: 255–269.
- Kuno, M. 2002. How large can small clauses be? *Proceedings of 3rd Tokyo Conference on Psycholinguistics*: 235–260.
- Kuno, M. 2004. Reconstruction obeys minimality: A representational theory of symmetrical grammar. *Linguistic Research* 20: 24–98.
- Kuno, M. To appear. How is reconstruction constrained? *Proceedings of 29th Penn Linguistics Colloquium*.
- May, R. 1977. The Grammar of Quantification. PhD dissertation, MIT.
- May, R. 1985. *Logical Form*. Cambridge MA: The MIT Press.
- Müller, G. 1996. A constraint on remnant movement. *Natural Language and Linguistic Theory* 14: 355–407.
- Müller, G. 1998. *Incomplete Category Fronting*. Dordrecht: Kluwer.
- Richards, N. 1997. What Moves Where in Which Language? PhD dissertation, MIT.
- Richards, N. 2001. *Movement in Language: Interactions and architectures*. Cambridge MA: The MIT Press.
- Rizzi, L. 1986. On chain formation. In *The Syntax of Pronominal Clitics*, H. Borer (ed.), 65–95. New York NY: Academic Press.
- Rizzi, L. 1990. *Relativized Minimality*. Cambridge MA: The MIT Press.
- Rudin, C. 1988. On multiple questions and multiple WH fronting. *Natural Language and Linguistic Theory* 6: 445–501.
- Saito, M. 1985. Some Asymmetries in Japanese and their Implication. PhD dissertation, MIT.
- Saito, M. 1989. Scrambling as semantically vacuous A'-movement. In *Alternative Conceptions of Phrase Structure*, M. Baltin and A. Kroch (eds), 182–200. Chicago IL: University of Chicago Press.
- Sauerland, U. 1999. Erasability and interpretation. *Syntax* 2: 161–188.
- Sauerland, U. and P. Elbourne. 2002. Total reconstruction, PF movement and derivational order. *Linguistic Inquiry* 33: 283–319.
- Takano, Y. 1994. Unbound traces and indeterminacy of derivation. In *Current Topics in English and Japanese*, M. Nakamura (ed.), 229–253. Tokyo: Hituzu Syobo.
- Yatsushiro, K. 1996. On the unaccusatives construction and nominative case licensing, Ms., University of Connecticut.

Japanese topic-constructions in the minimalist view of the syntax-semantics interface

Takashi Munakata
Yokohama National University

Abstract

This paper discusses Japanese topic-constructions from the point of view of a minimalist syntax-semantics interface, concentrating on the *nara*-construction. In particular, an interpretative mechanism of the Semantic Component is proposed for the interpretation of Japanese topic-constructions. It is argued that this interpretative mechanism requires the syntax to utilize a split CP (Rizzi 1997), and that this should be treated as an Interface Condition. It is also shown that the analysis advocated here further supports the Strong Minimalist Thesis (Chomsky 2001 and 2004a) and Ontological Minimalism (cf. Martin and Uriagereka 2000 and Chomsky 2004b).

1. Introduction

Since Rizzi (1997), there has been much interest in the CP-domain and many authors raise issues about the split-CP hypothesis (cf. E. Kiss 1998, Puskas 1997, Rizzi 2004 and Belletti 2004). However, few authors pay attention to the relationship between the split-CP hypothesis and the semantic interface. Namely, which kinds of requirements of the semantic interface necessitate a split CP? If we can give an answer to this question, it is clearly a favorable move in view of the Minimalist Program, which seeks to derive the properties of the syntactic computational mechanism of the Language Faculty from the requirements of the semantic interface (cf. Chomsky 1994 and 2004a).

In this paper, I will discuss Japanese topic-constructions from a minimalist viewpoint of the syntax-semantics interface, concentrating on the *nara*-construction, which exhibit a very rich interpretation. Also, I will attempt to specify the requirements of the semantic interface which demand a split CP. Specifically, I will show that the interpretation of Japanese topic-constructions is deeply connected to the semantic interpretative mechanism in the Semantic Component and that Interface Conditions are responsible for the availability of the very rich interpretation which the *nara*-construction expresses.

Also, I will suggest that the semantic interpretative mechanism is a hierarchical four-dimensional structure (cf. Uriagereka 2002) and that, given this four-dimensional semantic interpretative mechanism, the syntactic computational mechanism must utilize a split CP. In Section 5, it will be indicated that this interpretative mechanism has an interesting implication in that it is built based on a topological mechanism and seems to give supporting evidence for the claim that Ontological Minimalism (cf. Martin and Uriagereka 2000 and Chomsky 2004b) is on the right track.

2. *nara*-construction in Japanese

In this section, I will describe some peculiarities of the *nara*-construction in Japanese, comparing it with a topic *wa*-construction and a nominative-*ga* copula construction. After that, I will analyze the *nara*-construction based on Carlson (1989).¹

2.1 *nara*-construction and other copula constructions

An example of the *nara*-construction, which receives a conditional and irrealis interpretation, is given below:²

- (1) *nara*-construction in Japanese
genogogakusya nara daihyoo(-da).
 linguist NARA representative(-COPULA)
 ‘As for linguists, given their characteristics, it is appropriate for them to be representatives.’

Also, there are two other copula constructions in Japanese: a nominative-*ga* copula construction in (2a) and a topic-*wa* construction in (2b):

- (2) a. *genogogakusya ga daihyoo-da.*
 linguist NOM representative-COPULA
 ‘A linguist is a representative.’
 b. *genogogakusya wa daihyoo-da.*
 linguist TOP representative-COPULA
 ‘As for a linguist, he/she is a representative.’

As can easily be seen, the *nara*-construction in (1) expresses a very rich *meaning* including such information as linguist’s appropriateness as a representative, unlike the nominative-*ga* copula construction and the standard-*wa* topic copula construction. Given the apparent similarity of the surface form of the sentences, other than the presence of *nara*, *wa* and *ga*, *nara* ought to serve a more complex function than *wa* or *ga* to create the interpretative differences between (1) and (2). Also, the *nara*-construction in (1) is irrealis in the sense that it refers to some conditional but hopeful and desirable environment and it is true even if there is no linguist who is a representative

in the actual world, whereas the sentences in (2) have existential import. The relevant interpretations of the *nara*-construction are summarized in (3):

(3) Japanese *nara*-construction³

[NP1 *nara* NP2-*da*]

NP1 – Individual/entity, embodying properties abstracted from *Intensional Object* (Carlson 1989) & Topic-marked phrase

NP2 – Individual/entity, embodying properties abstracted from *Kind* (Carlson 1989)

As seen in (3), NP1 preceding *nara* bears intensionality, which will be explained in 2.2, whereas NP2 has a generic import, which makes it possible that the *nara*-construction expresses much richer interpretation than the sentences in (2) as a whole.

Before I give a concrete analysis of the *nara*-construction, I will briefly review Carlson (1989) and illustrate what is meant by *Intensional Object* and *Kind*.

2.2 Carlson (1989) and *nara*-construction

According to Carlson (1989: 168), individuals are *Intensional Objects*, which are “the sorts of things that can appear at different times and places (and in different worlds) and still be *the same* even if the instances themselves are distinguishable”. I give examples involving *Intensional Object* in (4):

- (4) a. A guard stands in front of the queen’s palace. (Carlson. 1989. (7b))
 b. John eats when he gets hungry. (Carlson. 1989. (35))

In (4a), the subject *a guard* is existentially interpreted.⁴ In this case, a guard may exist at different times and places (= different instances), which are distinguishable themselves such as one in front of the entrance gate in the early morning and one near the palace in the afternoon, yet it is still the same guard. Nonetheless, this subject NP is intensional at the same time in the sense that it cannot be automatically replaced with *the person who I am pointing my finger at*, even though the person I am pointing at is this guard and its extensional meaning is the same. Likewise, in (4b), the subject NP *John* may refer to different instances whenever *John* gets hungry and all of these different instances refer to *John* as individual. This subject is also intensional as *a guard* in (4a). Due to this, Carlson calls this sort of individual an *Intensional Object* and regards it as intensional. An existential interpretation of the subject NP is possible with an *Intensional Object*, because the individuals are quantified over at given points (instances) of references (Carlson 1989: 186) and it becomes possible to pick up different instances of the individuals.

Also, he mentions another sort of individual, a *Kind*. For example, nominal expressions such as *bears* represent, like a proper name, an individual. Yet, this kind of expression, as a kind, is able to “denote multiple simultaneous instances at distinct locations in the same world” (Carlson 1989: 169). Thus, *bears* in (5a), unlike *John*

Smith in (5b), can “appear simultaneously” on the South Pole and the Indianapolis Zoo, whereas *Smith* can be in one of those places at a given time:

- (5) a. Bears hibernate. (Carlson 1989. 167)
 b. John Smith hibernates.

Essentially, a *Kind* interpretation is a standard generic interpretation.

Carlson ascribes the difference between *Intensional Objects* and *Kinds* to the reading of the NP itself and claims that there are *two levels* of intensionality.⁵ Especially, he suggests that the *unbounded* reading is related to the *Intensional Object* interpretation, whereas the *bounded* meaning is responsible for the *Kind* interpretation. To clarify the distinction between *bounded* and *unbounded* readings, consider the sentence in (6):

- (6) Every friend of John's likes sweets. (Carlson 1989. (43))
 a. There is a necessary characteristic to like sweets on all friends of John's potential friends as well as his present ones.
unbounded / Intensional Object
 b. A common characteristic of all John's present friends is to like sweets.
bounded / Kind

In (6a), the sentence is understood to express a requirement for anyone who might be a friend of John's and this applies to both all present friends and potential friends of John. In a word, the subject NP is interpreted as intensional, though each instance of a friend of John's is extensional. Carlson suggests that the interpretation (6a) may be derived, if the nominal phrase *every friend of John's* covers all *unbounded* instances of John's potential friends in the relevant context (cf. John's life). According to him, the *unbounded* generic interpretation attributes the generic property of liking sweets to the meaning of the subject NP *every friend of John's*, as shown in (7):

- (7) [Gn(likes sweets)]($\forall x$: friend of John's (x)). (Carlson 1989. (45))

In this paper, I tentatively assume that there is an intensional operator in the semantic representation corresponding to (7), which gives intensionality to NPs (the individuals involving entities) when these NPs are bound by this operator.⁶

In (6b), the sentence, on the other hand, describes a common characteristic of all John's present friends. For example, suppose that John has three friends. In this case, the generalization in (6b) may hold if we look at each of John's three friends and find that each likes sweets, whereas we cannot determine whether John's potential friends are required to like sweets by looking at these three friends. In that sense, the subject *every friend of John's* covers *bounded* finite instances of John's friends and all instances refer to tokens of different friends in different locations at the same period.

Here, I assume, following Diesing (1992) that this type of a generic interpretation is induced when a generic operator is introduced in the semantic representation. An

NP is interpreted as *Kind* when it is bound by a generic operator in the restrictive clause, as discussed later.⁷

Let us turn to the *nara*-construction in (1), which is repeated below:

- (8) *gengogakusya nara daihyoo(-da)*.

‘As for linguists, given their characteristics, it is appropriate for them to be representatives.’

As I said, NP1 preceding *nara* has an intensionality and NP2 following *nara* seems to have generic import, which I tentatively attributed to the assumption that NP1 embodies *Intensional Object* and NP2 *Kind*. Given the denotations of *Intensional Object* and *Kind* discussed above respectively, the relevant interpretation listed in (3) is now restated as follows. First, the subject (NP1) *gengogakusya* ‘linguists’ expresses their noticeable properties and behavior, abstracted and generalized from every distinguishable instance of different linguists in their whole history like instances of linguists thinking always critically, knowing several linguistic phenomena in several languages and working very hard on their own research, that is, the properties of linguists abstracted from *Intensional Object*. As a whole, it conveys their noticeable characteristics and habits like diligence.

On the other hand, *daihyoo* ‘representative’ (NP2) expresses its typical characteristics, abstracted from general properties of multiple instances of representatives at different scenes at different places in the same time like a representative of United Nations, a representative of Microsoft and a representative of Harvard University, namely, the characteristics of *representatives* abstracted from *Kind*. As a result, it yields typical characteristics of representatives like the general necessity of diligence and leadership. As a whole, the sentence in (1) means that linguists, given their attributes and behavior, are appropriate individuals of a representative since they possess the preferable properties for being a representative.

This analysis of the *nara*-construction is supported by the following contrasts between the *nara*-construction in (9) and other copula constructions in (10–11):⁸

- (9) a. *MIT nara Chomsky(-da)*.

MIT NARA Chomsky(-COPULA).

‘As for MIT, given its properties and environment, it is really appropriate for and has strong association with Chomsky.’

- b. *kekkon nara gaisikei(-da)*.

marriage NARA foreign-owned(-COPULA)

‘As for marriage, given my future and married life, it is appropriate to marry with a person who works at foreign-owned companies and I want to do.’

- (10) a. **MIT ga Chomsky-da*.

#‘MIT is Chomsky.’

- b. **kekkon ga gaisikei-da*.

#‘Marriage is a foreign-owned company.’

- (11) a.⁹ *MIT wa Chomsky-da.
 #‘As for MIT, it is Chomsky.’
- b. *kekkon wa gasikei-da.
 #‘As for marriage, it is a foreign-owned company.’

As shown in (9–11), the *nara*-construction is possible in many contexts, where the nominative copula construction and the standard-*wa* copula construction would receive quite anomalous meanings. This contrast is easily explained by the analysis proposed above. Because the NPs in the *nara*-construction is interpreted as an *Intensional Object* and a *Kind* and behave as if they receive a much more sophisticated interpretation than a mere argument NP or predicative NP, a sentence involving the *nara*-construction can receive a special meaning which cannot be obtained in other copula constructions, whereas an NP in other copula constructions is given no special interpretation and receives a trivial interpretation, resulting in somewhat odd interpretations, as the translations show.

In this section I started by describing the properties of the *nara*-construction. Then, I gave a brief review of *Intensional Object* and *Kind* in Carlson (1989) and attributed the rich interpretation of the *nara*-construction in (8) to the assumption that NP1 obtains an *Intensional Object* interpretation and NP2 obtains a *Kind* interpretation, which is also responsible for the occurrence of the *nara*-construction in several contexts. I summarize the peculiarities of the *nara*-construction in (12):

- (12) Peculiarities of *nara*-construction
- i. quite richer interpretation than typical copula constructions with *ga* and *wa*
 - NP1 (NP preceding *nara*) with the interpretation abstracted from *Intensional Object* (Carlson 1989)
 - NP2 (NP following *nara*) with the interpretation abstracted from *Kind* (Carlson 1989)
 - ii. felicitous interpretation within several sentences (cf. (9))

Hereafter, I will investigate into a mechanism which gives rise to the peculiarities of the *nara*-construction and into the licensing conditions which allow this mechanism to work in such a way. The next section will introduce the Mapping Condition and the hierarchalized restrictive clause as a starting point to determine the mechanism which is the source of the unique properties of the *nara*-construction.

3. Mapping Condition

In this section, I will introduce the Mapping Hypothesis (Diesing 1992) and generalize it along with the recent proposal of the split CP hypothesis by Rizzi (1997). Also, I will propose that the restrictive clause is actually hierarchalized. The generalized Mapping Hypothesis and the hierarchalized restrictive clause will be used to analyze the *nara*-construction in Section 4.

3.1 Generalized Mapping Condition

According to Diesing (1992), the interpretation of bare plural subjects may be ambiguous depending on whether a sentence involves a stage-level predicate or an individual-level predicate. For example, the bare plural subject *firemen* in (13b), which contains a stage-level predicate, is ambiguous between a generic interpretation and an existential interpretation, whereas *violinists* in (13a), which contains an individual-level predicate is unambiguous. This bare subject has only a generic interpretation:

- (13) a. Violinists are intelligent.
 b. Firemen are available.

Given these facts, Diesing (1992) proposes the Mapping Hypothesis in (14):¹⁰

- (14) Mapping Hypothesis (Diesing 1992. 10. (14))
 i. Materials from VP are mapped into the nuclear scope.
 ii. Materials outside VP are mapped into a restrictive clause.

Considering the Mapping Hypothesis in (14) in the present context, bare plurals are interpreted differently depending on whether they are located within VP or outside VP. When bare plurals are positioned within VP, they are mapped into the nuclear scope and bound by an existential closure, assigned an existential interpretation. On the other hand, when bare plurals are positioned outside VP, they are mapped into the restrictive clause and bound by a generic operator, assigned a generic interpretation. Diesing suggests that the subject of an individual-level predicate is base-generated in IP-Spec and PRO stays in VP-Spec to be θ -marked, whereas the subject of stage-level predicate is base-generated in VP-Spec and moved into IP-Spec for case reason, as schematically shown below:

- (15) a. [_{IP} Violinists_i are [_{VP} PRO_i intelligent]]
 b. [_{IP} Firemen_i are [_{VP} *t*_i available]]

Then, she derives the differences of the interpretational ambiguities of bare plural subjects between (13a) and (13b) from the schematic structures in (15). Because bare plural subjects of an individual-level predicate can occur only within IP-Spec, it must be mapped into the restrictive clause and bound by a generic operator, obtaining a generic interpretation. For this reason, the bare plural subject *violinists* in (13a) is unambiguous. On the other hand, bare plural subjects of a stage-level predicate have a reconstruction option and may be positioned in either IP-Spec or VP-Spec at LF, mapped into the nuclear scope or the restrictive clause, depending on whether they undergo reconstruction. When they are reconstructed, they are mapped into the nuclear scope and obtain an existential interpretation, while when they remain in IP-Spec, they are mapped into the restrictive clause and obtain a generic interpretation.

The Mapping Hypothesis does a good job in simple cases, yet it may not be enough when one considers a syntactic projection above IP. As seen above, it nicely

distinguishes syntactic materials within IP, but does not say anything about syntactic materials above IP, especially, the CP-domain.¹¹

Recently, several authors, such as Rizzi (1997) and E. Kiss (1998), have explored the domain of CP in detail. In particular, Rizzi proposes that CP is divided into four functional projections (hereafter, the split CP hypothesis), as shown in (16):¹²

- (16) [_{ForceP} Spec Force [_{TopP} Spec Top⁰ [_{FocP} Spec Foc⁰ [_{FinP} Spec Fin⁰ [_{IP}]]]]]

If every semantic operator is correlated with a particular syntactic projection based on its own property, it seems plausible to assume that each functional projection within the CP-domain is associated with a corresponding operator. For instance, FocP is associated with a focus operator (cf. Rizzi 1997) and TopP is associated with a topic operator (cf. Huang 1984). If so, it is easy to think of a complex case where more than one operator co-occur and multiple variables are necessitated and, correspondingly, it seems that more than one restrictive clause is necessary. Clearly, these multiple occurrences of operators, variables and restrictive clauses make the semantic representation quite complicated and make it difficult to relate an operator to a variable and a restrictive clause appropriately. Also, in that case, it may be possible that an operator could bind two variables, one of which should be bound by another operator, which seems to violate the Bijection Principle in (17):

- (17) a. An operator must locally A'-bind one and only one variable.
 b. A variable must be locally A'-bound by one and only one operator.
 (Koopman and Sportiche 1982)

To avoid this kind of problem, I would like to generalize the Mapping Hypothesis, taking the split CP hypothesis in (16) by Rizzi (1997) into consideration. Additionally, it is natural to assume that the restrictive clause is also hierarchicalized to be compatible with the split CP hypothesis. To achieve this revision, I generalize the Mapping Hypothesis as in (18) and hypothesize the hierarchicalized restrictive clause as in (19):

- (18) Generalized Mapping Hypothesis (Mapping Condition)¹³
 The height of syntactic elements corresponds in general to the kind of interpretation they receive and functional projections higher than T are mapped into the restrictive clause.
- (19) Hierarchicalized restrictive clause (cf. Chierchia 1995)¹⁴
- i. The restrictive clause is hierarchicalized along with the functional projections of the CP domain and each restrictive clause corresponds to different functional projections within the CP-domain.
 - ii. If *x* moves to Spec-FP, there is an operator α corresponding to the functional head F and, then, *y* is the restrictive clause of α .

Following the recent proposal of Chomsky (2001 and 2004a), I assume that the generalized Mapping Hypothesis and the hierarchicalized restrictive clause, properties of LF, follow from Interface Conditions (IC). Hereafter, I will refer to this generalized Mapping Hypothesis in (18) as the Mapping Condition (MC).

Before moving to the next section, I have one thing to note. As I said in the introduction, the split CP hypothesis should be motivated by the requirements of the semantic interface. However, in this section I argued that the split CP hypothesis forces the restrictive clause to be hierarchicalized and the MC to be changed accordingly, which is the other way around from what I said in the introduction and clearly lacks the minimalist spirit. Nonetheless, as implied in the beginning of this section, I conveniently modified the Mapping Hypothesis and the restrictive clause for the analysis of the *nara*-construction in Japanese. In Section 5, I will motivate the MC and the hierarchicalized restrictive clause on minimalist grounds and revise these two proposals by adopting Uriagereka's (2002) idea that the Language Faculty utilizes a hierarchical four-dimensional structure. Before doing this work, I will analyze topic constructions in Japanese and provide support for the hierarchicalized restrictive clause and the MC.

4. Analysis

In this section, I will explain the peculiarities of the *nara*-construction in terms of the MC by comparing the standard-*wa* topic construction and the *nara*-construction. After analyzing topic-constructions in Japanese, I will try to argue for my analysis, especially for syntactic positions of NP1 (NP preceding *nara*), *nara* and NP2 (NP following *nara*). The data presented support the hierarchicalized restrictive clause and the MC.

4.1 Topic constructions with *wa*

Before discussing the *nara*-construction, I would like to analyze the standard-*wa* topic construction first. An example of the standard-*wa* topic construction is given below:

- (20) *gengogakusya wa daihyoo-da.*
 linguist TOP representative-COPULA
 'As for a linguist, he/she is a representative.'

In the literature, topic phrases are commonly thought to be located in Spec-TopP (cf. Rizzi 1997 and Watanabe 2003). Assuming *wa* is a functional element marking a common topic in Japanese and occupies Top-head, NP-*wa* is located in TopP, as in (21):^{15,16}

- (21) [_{TopP} linguist_i [_{Top} *wa*] [_{TP} *t_i* [_{vP} *t_i* [_{SC} *t_i* representative] *da*]_{vP}] T_{TP}] _{TopP}]

By the MC, NP-*wa* is mapped into the restrictive clause of a topic operator and bound by this operator, as informally illustrated in (22):

- (22) (Top)_x [*x* is linguist] (∃*x*)_y *y* is a representative & *x* is *y*.

In contrast, I assume an NP with *ga* is located in Spec-TP (cf. Kuroda 1992) and mapped into the nuclear scope, bound by an implicit existential quantifier.¹⁷ An example of the nominative copula construction is given in (23):

- (23) *gengogakusya ga daihyoo-da.*
 linguist NOM representative-COPULA
 ‘A linguist is a representative.’

The syntactic structure of the nominative copula construction in (23) is given in (24a) and its semantic representation is illustrated in (24b):

- (24) a. [_{TP} linguist_i [_{vP} *t_i* [_{SC} *t_i* representative] *da*]_{vP}] T_{TP}]
 b. (Ex)_{x,y}, *x*, *y*, *x* is a linguist, *y* is a representative & *x* is *y*.

In the next subsection, I will analyze the *nara*-construction based on the analysis of the standard-*wa* construction.

4.2 *nara*-construction

As discussed in Section 2, the interpretation of the *nara*-construction, an example of which is repeated below, is very rich:

- (25) *gengogakusya nara daihyoo-da.*
 linguist NARA representative-COPULA
 ‘As for linguists, given their characteristics, it is appropriate and suitable for them to be representative.’

Since, as shown in Section 2, the interpretation of NP-*nara* is in some ways similar to that of NP-*wa*, I assume it is mapped into one of the restrictive clause, not the nuclear scope. However, since NP-*nara* clearly functions as more than a mere topic, I would like to claim that the *nara*-construction differs from the topic *wa*-construction in the following two respects. First, in the *nara*-construction, not only the NP preceding *nara* (NP1) but the NP following *nara* (NP2) move to high functional projections FP, unlike the standard-*wa* topic construction (see (21)).¹⁸ Clearly, this entails that these NPs may be mapped into the restrictive clause and bound by quantificational operators due to the movement. In addition, I claim NP1 is interpreted as a topic as well as an *Intensional Object* in the *nara*-construction.

More specifically, I claim that in the *nara*-construction NP1 (here, *gengogakusya* = ‘linguists’) is located in Spec-FP1 where it is bound by an intensional operator in the restrictive clause of this operator and NP2 (*daihyoo* = ‘representatives’) is located in

Spec-FP2 where it is bound by a generic operator, as shown in (26), resulting in their interpretations as *Intensional Object* and *Kind* respectively:¹⁹

- (26) [_{FP1} linguists_i *nara* [_{FP2} representatives_j F2 [_{TopP} *t*_i Top [_{TP} *t*_i [_{VP} *t*_i [_{SC} *t*_i *t*_j]
*da*_{VP}] T]]]]]

These mappings are assured by the MC and the hierarchicalized restrictive clause.²⁰ An intensional operator is positioned in a quantificational domain where it can bind a variable in the highest place and a generic operator binds a variable in the next highest place, as in (27):²¹

- (27) (Int)_x (Gen)_y (Top)_z [*x* is a linguist_i [*y* is a representative [*z* is a *trace* of *x*] ... [
...] *x* is *y*.

Also, I attribute the dual interpretations of NP1 with a topic and an *Intensional Object* to the fact that it moves first to Spec-TopP and then to Spec-FP1, as in (26). Then, the lower copy of NP1 in Spec-TopP is bound by a topic operator and NP1 in Spec-FP1 is bound by an intensional operator, as illustrated in (27). Though this binding relationship might violate Chain Uniformity, I speculate that the Chain Uniformity is maintained unless the Uniformity Condition in (28) is violated:²²

- (28) Uniformity Condition

Chain Uniformity of α is satisfied unless elements of a chain of α are bound both in either of the restrictive clauses and the nuclear scope simultaneously.

Now, it is a good place to ask why the *nara*-construction has the peculiarities in (12), which are repeated below:

- (12) Peculiarities of *nara*-construction
- i. quite richer interpretation than typical copula constructions with *ga* and *wa*
 - NP1 (NP preceding *nara*) with the interpretation abstracted from *Intensional Object* (Carlson 1989)
 - NP2 (NP following *nara*) with the interpretation abstracted from *Kind* (Carlson 1989)
 - ii. felicitous interpretation within several sentences (cf. (9))

First of all, why does the *nara*-construction have the rich meaning? This is due to the two properties of *nara*, discussed above. It is because *nara* moves NP1 and NP2 into FP and these NPs are mapped into the restrictive clauses of the relevant operators. Given the MC and the hierarchicalized restrictive clause, these NPs are bound by the relevant quantificational operators, due to which NP1 can receive the *Intensional Object* interpretation and NP2 can receive the *Kind* interpretation, enabling the *nara*-construction to express the very rich interpretation as a whole, unlike other copula constructions.

Second, why can the *nara*-construction appear in a wide range of environments? Because NP1 and NP2 are mapped into the restrictive clauses of the relevant quantificational operators and bound by these operators, receiving an intensional interpretation and the *Kind* interpretation respectively, these NPs express much more than their inherent meanings and thus contribute to the rich interpretation of the *nara*-construction. As a result, the *nara*-construction can exhibit the rich and licit interpretation of the sentences like ‘given my future and married life, I want to marry with a person who works at foreign-owned companies’, as in (9).

In contrast, NPs in the nominative copula construction are mapped into the nuclear scope and bound by an implicit existential quantifier, unable to express more than their inherent meanings. Due to this poor mapping, the nominative copula construction in (10) exhibits quite strange meanings like ‘marriage is foreign-owned’, inducing unacceptability. Similarly, even if one of NPs is mapped into the restrictive clause in the standard-*wa* topic construction, it is bound by a topic operator and receives only a topic interpretation. Thus, this NP is interpreted as a topic with an existential meaning. Therefore, (11) are bad due to this poor mapping, leading to an anomalous LF interpretation like ‘as for marriage, it is foreign-owned’.

Clearly, the MC and the hierarchicalized restrictive clause explain the peculiarities of the *nara*-construction and the distribution of copula constructions in Japanese. In the next section, I will discuss the mapping phenomena in the *nara*-construction and show that the analysis in this subsection is actually reasonable. In addition, I will give a piece of evidence supporting the MC and the hierarchicalized restrictive clause.

4.2.1 Evidence for mapping in the *nara*-construction

According to Diesing (1992), the following sentences in (29) may have an interpretation where variables introduced by the indefinites *Japanese* and *violinists* may be bound by a quantificational adverb, an operator adjoined to TP by Quantifier Construal, giving rise to a quantificational interpretation:

- (29) a. Japanese often read newspaper. (cf. Diesing 1992)
 ‘Many Japanese read newspaper.’
 b. Violinists seldom play the piano.
 ‘Few violinists play the piano.’

Diesing claims that a quantificational interpretation is obtained in (29) because the subject may be mapped into the restrictive clause and bound by the quantificational adverb (adverbial quantificational operator), resulting in the following semantic representation:

- (30) a. often_x [*x* is a Japanese] *x* reads newspaper.
 b. seldom_x [*x* is a violinist] *x* plays the piano.

As discussed in the previous subsection, NP1 in the *nara*-construction is mapped into the restrictive clause of an intensional operator, where it is bound by this operator.

This means that this NP is not bound by a generic operator, which implies that it is moved into the highest position in narrow syntax and escapes from binding by a generic operator given the MC and the hierarchicalized restrictive clause. If so, it should be the case that NP1 escapes from binding by an adverbial quantificational operator in a Japanese sentence corresponding to (29), whereas the NP preceding *wa* should be bound by this operator. These predictions are borne out. Consider the sentences in (31):

- (31) a. *seijika nara taitei guutara-da.*
 politician NARA mostly laziness-COPULA
 'If some person is a politician, given its properties, it is mostly the case that this person has a general property of laziness.'
- b. *seijika wa taitei guutara-da.*
 politician TOP mostly lazy-COPULA
 'As for politicians, most ones are lazy.'
- c. **seijika ga taitei guutara-da.*
 politician NOM mostly lazy-COPULA

In (31a), *seijika* 'politician' escapes from binding by an adverbial quantificational operator created by *taitei* 'often'.²³ Given its interpretation in (31a), it is bound by the intensional operator as usual. On the other hand, the NP preceding *wa* does not escape from binding by an adverbial quantificational operator and receives a quantificational interpretation in (31b). I assume that (31c) is bad, because there is no NP movement involved in this sentence and nothing is mapped into the restrictive clause. Consequently, an adverbial quantificational operator has nothing to bind, resulting in vacuous quantification. The relevant informal semantic representations are given below:²⁴

- (32) a. {Int_x [x is a politician] Gen_y [y is laziness]} ... [...] x is y. (= (31a))
- b. *taitei* (often)_x [x is a politician] x is lazy. (= (31b))
- c. **taitei* [...] x is a politician, y is laziness & x is y. (= (31c))

Vacuous quantification

Notice that the sentences in (31) and their semantic presentations in (32) lend a support for my analysis of the *nara*-construction as well as the MC and the hierarchicalized restrictive clause, because, as my analysis predicts, each of the relevant quantificational operators correctly bind its corresponding variable introduced by bare plurals, depending on the syntactic positions of bare plurals.

4.2.2 Evidence for places of NPs in *nara*-construction

Another piece of evidence for our analysis of the *nara*-construction comes from so-called *kagiru*-sentences. In Japanese, several types of sentences require the topic-construction with *wa*. The following type of sentences *A-wa B-ni kagi-ru* 'As for A, B

is best' (*kagiru*-sentence KGS) is one of them. Examples of KGS are given below:

- (33) a. *maguro wa sasimi ni kagi.ru.*
 tuna TOP raw.fish DAT best
 'As for tuna, raw tuna is best.'
- b. *American shorthair wa silver ni kagi.ru.*
 American Shorthair TOP silver DAT best
 'As for American shorthair, silver ones are best.'

Interestingly, *nara* can select and embed KGS under it as in (34), whereas multiple-topicalizations are impossible as in (35), indicating that the genuine topic-construction may not select and embed KGS:²⁵

- (34) a. *sakana nara maguro wa sasimi ni kagi.ru.*
 fish NARA tuna TOP raw.fish DAT best
 'As for fish, given its properties and characteristics, raw tuna is best among tuna dishes.'
- b. *neko nara American shorthair wa silver ni kagi.ru.*
 cat NARA American shorthair TOP silver DAT best
 'As for cats, given their characteristics, silver ones are best among American shorthair.'
- (35) a. **sakana wa maguro wa sasimi ni kagi.ru.*
- b. **neko wa American shorthair wa silver ni kagi.ru.*

The fact that standard-*wa* topic-construction can be embedded in the *nara*-construction may suggest that *nara* occupies the head of the highest functional projection (i.e.FP1), and that, in turn, NP1, which precedes *nara*, is positioned within FP1-Spec. Also, it is natural to think that NP2 in (34) occupies the same position as NP-*wa* in (33) maybe because of the selectional properties of *nara*. Assuming that it should be the case that generic topic phrases are positioned above TopP and a generic operator quantifies a variable in the higher hierarchicalized restrictive clause than a topic operator due to the MC, it follows that NP-*wa* in (33) and NP2 in (34) occupy the position above TopP, FP2-Spec.²⁶ I take this as evidence indicating that NP2 is positioned within FP2-Spec in general in the *nara*-construction.²⁷

In this section, I analyzed copula constructions in Japanese, concentrating on the *nara*-construction. Especially, I claimed that in the *nara*-construction, *nara* moves both NP1 and NP2 into higher functional projections and enables these NPs to be mapped into the higher restrictive clauses. As a result, NP1 is bound by an intensional operator and NP2 is bound by a generic operator, obtaining the *Intensional Object* interpretation and the *Kind* interpretation respectively and giving rise to the very rich interpretation of the *nara*-construction. For this reason, the *nara*-construction can appear in several contexts, unlike other copula constructions. Also, I provided two pieces of evidence (quantificational adverbs and KGS) for the analysis of the *nara*-

construction advocated here, which seem to argue for the MC and the hierarchicalized restrictive clause, too.

In the next section, I will modify the MC and the hierarchicalized restrictive clause along with Uriagereka's (2002) idea that the Language Faculty may utilize a hierarchical four-dimensional structure, proposing that the semantic interpretative mechanism of the semantic interface (i.e. the Semantic Component) makes use of a four-dimensional structure. I will return to the analysis of the *nara*-construction in Section 6.

5. Split CP and the semantic interpretative mechanism

In this section, following Uriagereka's (2002) idea that the Language Faculty utilizes a hierarchical four-dimensional structure, I will propose that the semantic interpretative mechanism of the Semantic Component consists of a hierarchical four-dimensional structure, incorporating the hierarchicalized restrictive clause into this four-dimensional semantic interpretative mechanism. Especially, I will argue that this four-dimensional semantic interpretative mechanism is theoretically favorable from the minimalist viewpoint (especially, in the view of the Strong Minimalist Thesis) in that the four-dimensional semantic mechanism may be built based on the topological mechanism, which Uriagereka (2002) suggests can be thought of as one of the general properties of natural science.

Also, I will attribute the existence of a split CP to the properties of the four-dimensional semantic mechanism. Simply put, different semantic dimensions demand different types of functional heads within the CP-domain and, thus, it is necessary to divide CP in accordance with this mechanism. Here, the MC plays a role. The MC is (at least, conceptually) necessary to bridge the split CP in narrow syntax and the four-dimensional semantic interpretative mechanism.

In Section 5.3, I will briefly touch on what Uriagereka call warping operations, which will be discussed in more detail in 6.2. I will begin by reviewing Uriagereka (2002).

5.1 Uriagereka 2002

In Section 3, I proposed the hierarchicalized restrictive clause for the semantic representation to be compatible with the split CP Hypothesis (Rizzi 1997). As admitted, this is only a speculation and equivalent to saying that because it is empirically preferable that syntactic structures of the CP-domain are complicated as Rizzi and other authors argue, the semantic representation is accordingly complicated, which is a mere descriptive account without any concrete evidence and conceptual motivation. Needless to say, this is not a minimalist account and, to say more, it is very strange in the view of IC that the semantic interface component observes the properties of

narrow syntax, not vice versa, though this account may explain the *nara*-construction and other copula constructions in Japanese.²⁸ Thus, we should ask why the semantic representation is complicated in the way the syntactic structure of the CP-domain is and why there exists such a parallel correspondence between narrow syntax and the semantic interface.

To solve these problems in a principled way, I would like to specify the properties of the semantic interpretative mechanism with the help of Uriagereka (2002).

Uriagereka (2002) suggests that the Language Faculty utilizes the hierarchical four-dimensional structure, which is derived from the algebraic structure of numbering systems.²⁹ Conceptually, this suggestion is quite reasonable if the Language Faculty is a mental organ, because it is clear that other cognitive systems make use of the hierarchical four-dimensional structure. Not only mathematical cognitive systems dealing with number (cf. Chomsky 2004b) and topological objects (cf. diagrammatic objects), but also the visual system makes use of the four-dimensional structure. Let us look at the use of the four-dimensionality of the visual system by taking diagrammatic objects as an example.

Among diagrammatic objects, lines are topologically dimensional objects and are an essential topological unit, functioning as atoms for every diagrammatic object. By topological operations applying to diagrammatic objects, lines are incrementally arranged into sides, stretching over space, and made into two dimensional objects, forming a part of sides.³⁰ We often see this topological operation in the actual world. For example, if three straight strings are connected with one another at each end, we can easily visualize them as a triangle with area, a two dimensional object.³¹ Likewise, sides are multiply arranged into solids, expanding over area, and made into three dimensional objects, also forming a part of solids by topological operations. In fact, this topological operation can be achieved without difficulty in the actual world. When one makes a paper round, one can visualize this paper as a pillar, a three dimensional object. Moreover, topological operations can make a four-dimensional object which spreads over a sequence of time by putting solids into a successive continuation over a temporal sequence, again making solids a part of a created four-dimensional object. Interestingly, we can easily do even this topological operation. A rounded paper, which is visually recognized as pillar, can be visualized as the four-dimensional objects moving continuously over a sequence of time by squashing and stretching this paper constantly.

To summarize, n -dimensional diagrammatic objects are made into the next higher $n+1$ dimensional objects by topological operations (cf. add area, space or time to diagrammatic objects), forming a part of the $n+1$ dimensional objects. Thus, topological operations organize a hierarchical structure. We have seen that these topological operations are easily achieved in a daily life with the help of the visual system. This implies that the visual system is equipped with a device dealing with a four-dimensional structure. In turn, it could be hoped that the Language Faculty

may similarly utilize a four-dimensional structure with topological operations, as claimed above.

Finally, I note that Uriagereka calls these kinds of topological operations warping operations, which boost an n -dimensional diagrammatic object into the next higher $n+1$ dimension.³² Thus, cognitive systems equipped with a four-dimensional structure may resort to warping operations to boost some object from a lower operation into a higher dimension.

In the next subsection, I will investigate the semantic interface and attempt to specify the interpretative mechanism, taking Uriagereka (2002) into consideration.

5.2 Four-dimensional structure and the semantic interface

As a starting point, I would like to seriously inquire into what kind of linguistic elements function as elementary unit in the Semantic Component. This elementary unit is thought to express a propositional meaning given that a proposition is an essential unit for the calculation of meanings.³³ Normally, syntactic expressions that convey a propositional meaning are (full or embedded) sentences, which always contain predicates.³⁴ Here, following Davidson's (1967) claim that predicates of natural languages are predicates of events (see also Tenny and Pustejovsky 2000). I assume that sentential predicates predicate events.³⁵ Thus, it follows that sentences expressing propositional meaning always involve a predication of events. If so, it is plausible to think that an atomic unit which expresses propositional meaning involves events and events as well as proposition function as an essential unit in the Semantic Component.

Now, it is a good place to introduce a semantic interpretative mechanism with a hierarchical four-dimensional structure. I refer to it by the term *the hierarchical Four-Dimensional Structure* (4DS). I assume that 4DS is responsible for the semantic interpretation in the semantic interface, the Semantic Component. As mentioned above, events function as an essential unit in the Semantic Component. For this reason, I assume that events function as elementary elements in 4DS and, consequently, are simple one-dimensional (1D) objects, which function as atoms for every semantic expression, as lines function as atoms for diagrammatical objects.³⁶

Also, I assume here that it is necessary for events to be anchored to a specific time to be assigned a truth-value (Ogihara 2006 and Parsons 1990). This suggests that linguistic objects in 1D syntactically correspond to the projection of T (TP), given that T or the projection of T functions as anchoring events to a specific time.³⁷ Following Ogihara (2006), I assume that this specific tense anchor gives an existential interpretation to a whole sentence involving events and event participants.^{38,39} Thus, the interpretation which is given to syntactic objects (actually, syntactic elements within TP and TP itself) in 1D in 4DS is an existential interpretation, which goes along with Uriagereka's (2002) suggestion that 1D consists of simple materials given that an existential interpretation is semantically simple.⁴⁰ For this reason, I propose that TP

is a lexical maximal projection. In addition, given that TP may be considered a lower syntactic projection than functional projections within the CP-domain, it is natural that MC requires that syntactic materials within TP are mapped into 1D in Multiple Transfer.

Moreover, this presumption is compatible with the MC. The MC suggests that TP corresponds to the nuclear scope in the semantic representation, where an existential closure is applied and variables are given an existential interpretation. TP corresponds to 1D where an existential interpretation is obtained, as in the nuclear scope. This suggests that the nuclear scope might be replaced with the lowest dimension within 4DS.

This assumption is both empirically and conceptually supported. Historically, TP is often thought of as the basic syntactic projection where all lexical syntactic properties are satisfied. For example, Chomsky (1986) suggests that TP corresponds to a Complete Functional Complex in which all grammatical roles like the subject and the object are satisfied.⁴¹ Additionally, Hale and Keyser (1993) assume that TP is the syntactic projection where the Lexical Relational Structure, a definition of which is given below, is fully expressed:⁴²

(36) Lexical Relational Structure (LRS)

The structures that express the relation among the arguments of lexical categories are characterized by the operation of two fundamental defining principles:

- a. Unambiguous Projection
- b. Full Interpretation

It might be said that TP, where a specific tense anchor appears syntactically, is the extended $\nu P/\nu^*P$ -projection, where the event structure of predicates is expressed and an event argument and all arguments are base-generated.⁴³ Furthermore, given that νP and ν^*P is the extended projection of VP which is the projection of a lexical head, and that TP is the syntactic projection where all lexical properties are satisfied, as Chomsky (1986) and Hale and Keyser (1993) argue, the assumption made in this paper that TP is a lexical maximal projection is supported. This seems a reasonable result within the 4DS framework. Uriagereka (2002) states that “it is not unreasonable that the complexity we see on one side should correspond to the complexity we see in the other”. One may reverse this statement. Namely, it is not mysterious that the simplicity we see on one side (the Semantic Component) should correspond to the simplicity we see in the other side (narrow syntax). If so, it is natural that TP is syntactically the lexical maximal projection and semantically the simple dimensional syntactic object in 4DS. The lexical projection only contains simple syntactic elements such as lexical heads and relevant functional heads like T and ν/ν^* which might be called extended lexical functional heads. In this sense, T and ν/ν^* are different from functional heads within the CP-domain like Topic or Force in that the former have grammatical functions connected to lexical heads such as case-marking and the assignment of an external θ -role, whereas the latter do not have such grammatical functions.

Similarly, 1D objects also consist of simple elements like events and a specific time anchor and receive a simple existential interpretation. Perhaps, the MC assures this relationship between the lexical maximal projection and 1D objects by requiring that TP is mapped into 1D.

Next, I would like to offer conceptual support for 4DS. In 5.1, I noted that lines are 1D objects in topology, which are fixed to a specific surface spot. Likewise, 1D syntactic objects are fixed to a specific time (maybe, for a long time interval as thick lines occupy a rather large surface area) in 4DS and receive an existential interpretation, giving rise to an existentiality in this world at the fixed specific time, which enables its truth-value to be evaluated with respect to this world at this specific time. Seemingly, lines and 1D syntactic objects are formed in a similar way, fixed to a specific point on area or in time. If so, we can treat lines and 1D syntactic objects (cf. TP) similarly, which implies that 4DS in the Semantic Component defines one-dimensional objects in the same way as topology does. Consequently, it might be safe to think that the Semantic Component utilizes the four-dimensional structure by applying similar operations to topological operations. If right, this is conceptually desirable, because it indicates that the semantic interpretative mechanism 4DS makes use of topological operations based on topological notions and the Language Faculty does resort to this kind of operation creating a four-dimensional structure, which is assumed to be generally used by other cognitive systems.

Now, we have specified 1D in 4DS, as summarized in (37):

- (37) i. 1D is the lowest dimension of 4DS, which is the semantic interpretative mechanism of the Semantic Component.
- ii. 1D is a dimension which consists of simple elementary elements.
- iii. 1D is a place where only an existential interpretation is obtained and corresponds to the nuclear scope of the MC.
- iv. 1D involves an elementary object functioning as atoms for linguistic objects (1D objects).
- v. 1D objects express events which are anchored to a specific time.
- vi. 1D objects are syntactically extended lexical maximal projections where all lexical properties like case and θ -role are satisfied, that is, TP.
- vii. 1D objects are defined with topological notions as lines.
- viii. The MC requires that TP is mapped into 1DS.

Let us now investigate multiple-dimensions of 4DS based on (37). As we saw above, multiple-dimensional objects are created from $n-1$ dimensional objects via topological operations. Then, it may be that the Semantic Component creates multiple-dimensional objects in 4DS from $n-1$ dimensional objects via similar topological operations.

Before entering the discussion, I would like to clarify, though informally, what each of the multiple-dimensions denotes. As indicated, 1D objects express an event structure. This suggests that 1D denotes a domain where an event structure and its arguments are represented with respect to a specific time. If so, it may be safe to

assume that an event structure and its arguments belong to this domain. Likewise, each of the multiple-dimensions denotes the domain where semantic objects like topic and generic are represented. Then, it can be said that these semantic objects belong to one of these domains. Also, it seems that some kind of applications are necessary in order that these semantic objects assign relevant semantic interpretations to their arguments, as a semantic functional application based on an event structure gives a propositional meaning in 1D. Here, I assume that these applications are semantic functional applications. Also, I tentatively assume that every functional application needs to be associated with one of dimensions in 4DS.⁴⁴ For instance, if a certain functional application assigns an interpretation of a semantic object which belongs to the domain that 2D denotes, this functional application is associated with 2D. Consequently, its arguments and the interpretation resulting from it also belong to 2D and are represented in this dimension.^{45,46}

Returning to 2D, it is noted that 2D is built based on 1D. Similarly, 2D objects are created from 1D objects. In 1D, a specific tense anchor plays an important role in defining a 1D object. Also, 1D diagrammatic objects (e.g. lines) are incrementally arranged into 2D diagrammatic objects (cf. sides). More informally, topological operations stop fixing lines at a specific surface spot, yet instead spread (i.e. place) these diagrammatical objects over a continuous sequence of (unbounded) points, making lines into sides. As a result, 2D consists of a continuous sequence of lines.

If a similar kind of topological operation is utilized in 4DS, events (cf. sentences which correspond to TP, representing events with respect to the specific tense) should be spread over a continuous sequence of times, not fixed at a specific tense anchor and made into 2D linguistic objects.⁴⁷

Then, a question arises. What are 2D linguistic objects? One immediate candidate that comes to mind is discourse-oriented elements. I pursue this possibility here. As written above, 2D consists of a continuous sequence of 1D diagrammatic objects in topology. Likewise, a discourse consists of a sequence of sentences, an actual linguistic embodiment of 1D objects (i.e. events) in our terms.⁴⁸ Also, discourse-oriented elements spread over a sequence of sentences, in the same way as 1D diagrammatic objects spread over a continuous sequence of (unbounded) points.⁴⁹ For this reason, I assume that 2D is a discourse and 2D linguistic objects contain discourse-oriented properties like topic and focus, which is equivalent to saying that discourse-oriented properties are assigned to any linguistic objects in 2D, involving arguments of an event structure of predicates.

Having defined 2D and 2D linguistic objects, I would like to turn to consider 3D in greater detail. As we have seen above, 3D and 3D linguistic objects are created based on 2D and 2D linguistic objects, namely a discourse and discourse-oriented properties. If so, 3D should consist of a continuous sequence of discourses. Then, it follows that 3D linguistic objects spread over a continuous sequence of discourses, which are made from 2D linguistic objects (i.e. discourse-oriented linguistic objects). However, it is not clear what a sequence of continuous discourses is.

It may be helpful to reconsider the properties of a discourse and events in more detail. As I said, a discourse is a sequence of sentences. Also, events, 1D linguistic objects, are anchored to different specific tense anchors to be evaluated with respect to a truth-value, forming sentences. However, there is one problem with this proposal. Events of a stage-level predicate like *available* and *play a violin* need to be evaluated in a more specific context, a specific place as well as a specific time.⁵⁰ For example, assuming that *Real Madrid*, the famous soccer team in Spain, visit Japan now, the sentence *Real Madrid are visiting this country now* may be true or false depending on where one utters this sentence. The sentence is true if uttered in Japan but false if in Korea.⁵¹ Thus, when events are a stage-level, they must be anchored to both a specific time and specific place in 1D to be evaluated with respect to a truth-value.⁵² This additional condition for events which stage-level predicates express might be attributed to their event structure in that a place argument is obligatory for an event structure of a stage-level predicate (see Krifka et al. 1995 and the papers in Carlson and Pelletier 1995 for the discussion). Of course, it is not the case that all 1D objects (i.e. events) must be anchored to a specific stage, given the existence of individual-level predicates.

Let us return to a discourse. A discourse is a sequence of sentences and itself covers a sequence of times, not a stage or a place. For instance, a single discourse may continue over a bounded continuous sequence of times at one specific shared place, but not at multiple places let alone over a continuous sequence of places. In short, it spreads (i.e. continues) over sets of stages across a sequence of times at a specific place. If so, topological operations should incrementally arrange (i.e. spread) a sequence of discourses over a continuous sequence of places. As a result, a sequence of discourses should cover sets of stages which are thought to be a combination of a continuous sequence of times and a continuous sequence of places.

This is what I propose for the definition of 3D. 3D consists of sets of a continuous sequence of stages. This continuous sequence of stages seems enough to cover all events in every time at every place throughout the real world and to represent this real world (one of possible world), when all stages in this possible world (= the real world) are included. Thus, I will assume that 3D corresponds to the possible world.⁵³ Also, I assume that 3D linguistic objects may receive a generic interpretation, obtaining a generic import, because 3D denotes a whole possible world and it suffices to examine it in order to evaluate how generic a certain characteristic is for entities or things as a whole. Regarding this point, discourse is not enough since one cannot evaluate to what extent a certain characteristic of a certain entity or thing can be generalized to other entities or things of the same class by looking at a discourse (a sequence of sentences). Moreover, if this continuous sequence of stages is unbounded, it should cover all sets of stages within one world over every time and every place. Thus, at the extreme, 3D is equivalent to all sets of stages in one possible world. In this case, 3D linguistic objects are assigned to an interpretation of universal truth like *humans are mammals*.

Now, 3D is defined as a possible world, which consists of a sequence of discourses

(i.e. all sets of stages), suggesting that 3D linguistic objects spread over all stages of a possible world.

Finally, I would like to specify the fourth-dimension (4D) and four-dimensional linguistic objects. From the discussions above, 4D should be an unbounded sequence of possible worlds. If so, it follows that 4D linguistic objects spread over a continuous sequence of possible worlds.

Semantically, an unbounded sequence of possible worlds is equivalent to sets of all possible worlds, which are enough to represent an intensional world. Thus, I assume that 4D consists of sets of all possible worlds, which we might call an intensional world, where 4D linguistic objects are given an intensional interpretation and obtain intensionality.

We specify each of multiple-dimensions of 4DS, namely 2D, 3D and 4D, and the linguistic objects of each dimension. I summarize the properties of each of these dimensions below:⁵⁴

(38) Multiple Dimensions in 4DS

- 2D: a sequence of sentences → discourse: sets of stages over a sequence of times
A dimension where discourse-oriented interpretations like topic and focus are given to 2D linguistic objects.
- 3D: sets of a continuous sequence of stages (a combination of a specific time and specific place) in one world
→ a whole possible world: cf. universal truth and genericity
A dimension where a 3D-related interpretation such as a generic interpretation and an interpretation of universal truth is given to 3D linguistic objects.
- 4D: sets of possible worlds → an intensional world: intensionality
A dimension where an intensional interpretation is given to 4D linguistic objects.

Clearly, the interpretations which are available in multiple-dimensions are those normally reflected within the CP-domain in narrow syntax, as Japanese topic constructions indicate. Then, it seems natural to assume that multiple-dimensions correspond to functional projections within the CP-domain, as the simple dimension 1D corresponds to the lexical maximal projection TP. Further, this correspondence between the syntactic projections in narrow syntax and 4DS has an implication that the latter, a property of the Semantic Component, characterizes the syntactic structures in the former. If so, the MC, which is revised as in (39), should be conceptually necessary because the latter imposes the MC on the former to assure this correspondence and an appropriate mapping, pertaining to the Strong Minimalist Thesis that the Language Faculty is an optimal solution to IC:

- (39) Syntactic materials are mapped into the appropriate dimension, depending on their syntactic height.

Probably, the MC reflects what Uriagereka (2002) intends when he says, “it is not unreasonable that the complexity we see on one side should correspond to the complexity we see in the other”. The MC in fact requires that, when syntactic materials are positioned in the highest syntactic position, arguably as a result of some complex syntactic operations, they are mapped into the highest dimension 4D in 4DS, which is the most complex dimension in 4DS.

Also, we get two welcoming results by specifying the multiple-dimensions of 4DS. First, the hierarchicalized restrictive clause proposed in Section 3, which is repeated below, is nicely incorporated into 4DS:

- (19) i. The restrictive clause is hierarchicalized along with the functional projections of the CP domain and each restrictive clause corresponds to different functional projections within the CP-domain.
- ii. If x moves to Spec-FP, there is an operator α corresponding to the functional head F and, then, y is the restrictive clause of α .

As observed in Section 4, there is a so-called operator hierarchy, which is regulated by (19ii). Due to (19), an intensional operator binds a variable in the highest restrictive clause, a generic operator binds a variable in the next highest restrictive clause and a topic operator binds variables in the lowest restrictive clause. Though this operator hierarchy appears to be supported empirically by the analysis of the *nara*-construction in Section 4, it was mysterious why such a hierarchy exists.

The multiple-dimensions of 4DS give an answer to this question and conceptual support for the hierarchicalized restrictive clause. Given that quantificational phenomena are dealt with by the semantic interface (that is, the Semantic Component), it seems necessary that every quantifier is associated with one of the multiple-dimensions in 4DS, where it has a quantificational domain. Because 4DS involve hierarchy intrinsically, an operator-hierarchy should be observed. For example, the dimension of an intension (i.e. 4D) is the highest dimension in 4DS in (38). Also, if the quantificational domain of every quantifier is determined according to its quantificational characteristics and it is necessary that every quantifier must bind a variable in the corresponding dimension, the restrictive clause needs to be hierarchicalized in accordance with the multiple-dimensions in 4DS. For example, because 3D is the dimension of genericity and the next highest dimension in 4DS, a generic operator binds a variable in the next highest restrictive clause (in the present term 3D), whereas because a topic operator is discourse-oriented, it is necessary that its quantificational domain is the lowest multiple-dimension 2D, the dimension of discourse-oriented properties.

The second welcome result of 4DS is more conceptual. As discussed in 5.1, topological operations may generally be used to build a four-dimensional structure of other cognitive systems, not only mathematical systems but the visual system. In this subsection, I have pursued the possibility that the Language Faculty incorporates algebraic structure of mathematics (i.e. the topological mechanism), also utilizing the same kind of topological operations to build the four dimensional structure in the Semantic

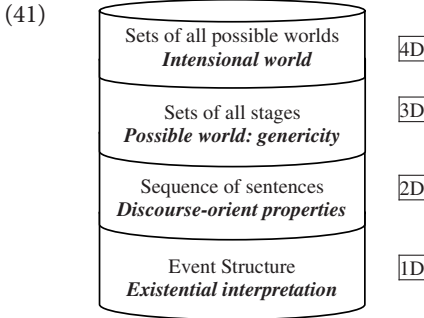
Component (see note 46). Interestingly, it has also been shown that the Language Faculty might create the four dimensional structure 4DS of the Semantic Component including linguistic dimensional objects in a similar way that the topological system creates the diagrammatic four-dimensional structure and the diagrammatic objects. If this is real, the Language Faculty might be said to observe general properties of natural science (cf. algebraic structures), which could argue for the Strong Minimalist Thesis (especially, in the sense of “principled explanation beyond explanatory adequacy” in Chomsky 2004a) and Ontological Minimalism (Martin and Uriagereka 2000 and Chomsky 2004b).

Now, I would like to summarize the whole architecture of 4DS, which is illustrated in (40) and schematized in (41):

(40) Architecture of 4DS

- a. 4DS
 - i. the semantic interpretative mechanism of the Semantic Component equipped with the hierarchical four-dimensional structure, which consists of the lowest dimension 1D and the multiple higher dimensions 2D, 3D and 4D.
 - ii. the Language faculty utilizes general operations of natural science (topological operations) to create 4DS in a similar way as the topological system does.
 - iii. The MC assures the structural correspondence between the syntactic structures in narrow syntax and 4DS.
- b. Simple Dimension – 1D
 - i. a dimension which consists of simple elementary elements functioning as atoms for all dimensions and where only an existential interpretation is obtained.
 - ii. 1D objects (i.e. events) need to be anchored to a specific time (a specific stage, a combination of time and place, when events describe a stage-level event) and are syntactically the extended lexical maximal projections (TP).
- c. Multiple-Dimension – 2D, 3D and 4D
 - i. dimensions which consist of complex elements and where complex (=rich) interpretations are obtained.
 - ii. dimensions which are syntactically expressed by functional projections within the CP-domain.
 - iii. a functional item obtains a richer interpretation, as it is mapped into the higher dimension.
 - iv. dimensions which correspond to the restrictive clause and where relevant quantifiers have their quantificational force.
 - 2D – a discourse: a dimension of discourse oriented properties (topic operator)
 - 3D – a possible world (generic operator)

4D – an intensional world: a dimension of intensionality (intensional operator)



Before closing this subsection, I will consider the question why a split CP is necessary. As we saw, 4DS contains multiple-dimensions which correspond to functional projections within the CP-domain. The multiple-dimensions consist of three different dimensions which cover different semantic domains, exhibiting different interpretations. Consequently, these dimensions deal with different semantic functions (cf. introducing different types of quantifiers). For example, 2D is different from other multiple-dimensions in that 2D expresses discourse-oriented properties in a sequence of sentences and only deals with referents anchored to a specific stage in the real world. Also, it does not deal with other than discourse. Since they are distinctive in semantics, it seems natural that these three dimensions demand different functional projections in order to map syntactic materials appropriately into one of these dimensions. This is also reasonable given the MC. Accordingly, the CP-domain, which corresponds to multiple-dimensions, should be divided into at least three or more projections.⁵⁵ In other words, a split CP may be said to be semantically motivated.

In addition, it is argued here that the Language Faculty utilizes the hierarchical four-dimensional structure 4DS in the Semantic Component. Also, it is indicated that the topological methodology and semantic considerations, which constitute the procedure creating 4DS, necessitate that in the architecture of 4DS, the simple dimension correspond to the lexical maximal projections TP, whereas the multiple-dimensions correspond to the functional projections within the CP-domain. If this is right, CP may need to be split into at least three projections to observe the parallelism between narrow syntax and the Semantic Component in the Language Faculty. Consequently, a split CP is also conceptually required.

This is a welcome move from the viewpoint of the minimalist framework. Actually, 4DS necessitates the split CP by imposing the MC on narrow syntax. This indicates that narrow syntax is characterized by the MC and the semantic interface (i.e. the Semantic Component), conforming to the Strong Minimalist Thesis.

5.3 Warping operations and 4DS

At the end of 5.1, I implied that the Language Faculty may make use of a warping operation, which boosts an n -dimensional object into the next higher $n+1$ dimension. In this subsection, I will briefly discuss such warping operations and try to specify their role in the Language Faculty. In Section 6, I will argue that they are restricted to syntactic operations in narrow syntax. In particular, I will claim that the only possible warping operation is *Throwing in*, the lexical insertion of functional heads directly from the Lexicon.

According to Uriagereka (2002), each dimension is connected with the next dimension by a relevant warping operation (an operation warping relevant elements from one dimension to the next higher dimension). Then it follows that warping operations are restricted to those applied to vertical cuts, across dimensions. As we saw, vertical cuts in 4DS are restricted to those from a simple lowest dimension (syntactically, the lexical maximal projection TP) into the higher complex multiple-dimensions (syntactically, functional projections within the CP-domain) and those within the multiple-dimensions.⁵⁶ In other words, a warping operation may boost 1D linguistic objects, which are supposed to receive existential interpretations, into the multiple-dimensions in order that these 1D objects may pick up new additional discourse-oriented properties or receive totally new semantic interpretations, such as genericity or intensionality. In addition, a warping operation enables multi-dimensional objects to obtain new semantic interpretations in the relevant multiple-dimensions and boost them into new different linguistic objects, which cannot be done if these objects remain in the lower multiple-projections. For example, when a 2D object is warped into 3D, this 2D object is assigned a new interpretation related to 3D, which cannot be given in 2D, spreading over all sets of stages in a possible world, not merely a sequence of sentences.

In the previous subsection, I argued that the parallelism between narrow syntax and the Semantic Component necessitates the existence of functional projections within the CP-domain in order for syntactic materials to be mapped into multiple-dimensions. Given the MC, syntactic materials should be placed within the projections of these functional heads in narrow syntax in order for these syntactic materials to be mapped into the multiple-dimensions and obtain the relevant interpretations in these dimensions. If so, a warping operation is possible only when functional heads within the CP-domain are syntactically projected. When there are no functional projections within the CP-domain, applications of a warping operation violate this parallelism and the MC. In other words a warping operation in 4DS should be restricted to syntactic operations and presupposes the existence of functional heads and functional projections within the CP-domain.

Here, it is helpful to consider the following comment by Uriagereka (2002. 300): “if expression X is syntactically more complex than expression Y, we expect expression X to correspond to a semantically more complex object than expression Y.” Taking

this comment seriously, and provided that a warping operation is restricted to narrow syntax, it is safe to assume that a warping operation is syntactic operations that make syntactic structures more complex.⁵⁷ Plausible candidates for this kind of syntactic operations are merge and move.⁵⁸ As discussed above, functional heads within the CP-domain are the key in a warping operation. Given this, it is reasonable to think that warping operations in 4DS are restricted to merge or move involving functional heads within the CP-domain in narrow syntax. When a specifier position of functional heads needs to be filled (for instance, for EPP reason), syntactic materials are merged with the specifier position of these functional heads via movement or base-generation and warped (mapped) into the multiple-dimensions, where these receive semantic interpretations.

I will propose in 6.2 that an only possible warping operation in the Language Faculty is the lexical insertion of functional heads directly from the Lexicon, which I call *Throwing in*.

In this subsection, I claimed that the semantic interpretative mechanism of the Semantic Component utilizes the four-dimensional structure, with the help of the idea from Uriagereka (2002) that the Language Faculty may utilize a four dimensional structure. This implementation of the semantic interpretative mechanism with the four-dimensional structure (4DS) has several interesting consequences, which conform to the Strong Minimalist Thesis and Ontological Minimalism. For example it is indicated that there is a possibility that the Language Faculty uses a topological mechanism, which can be thought as a general property of natural science, to build 4DS. In addition, it is suggested that there is the parallelism between syntactic structures and 4DS and the MC, one of IC, regulates this parallelism relationship. Namely, narrow syntax is characterized by IC and 4DS of the Semantic Component. Furthermore, I showed that a split CP is semantically and conceptually motivated, given the MC. I will continue the discussion of syntactic warping operation in the next subsection. In particular, I will claim that *Throwing in* is the only syntactic warping operation.

6. Further issues

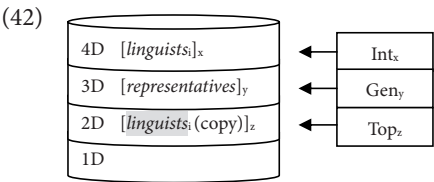
In Section 4, I gave the analysis of the *nara*-construction, explaining its peculiarities based on the MC and the hierarchicalized restrictive clause. Specifically, I argued that *nara* triggers movements of NP1 preceding *nara* and NP2 following it, enabling them to be mapped into the higher restrictive clauses and bound by an intensional operator and a generic operator respectively, which result in the rich interpretation of the *nara*-construction.

Though the proposed analysis may explain the peculiarities of the *nara*-construction, I have not given any explanation to why these movements are possible. In the previous section, I replaced the hierarchicalized restrictive clause with 4DS. As

implied in 5.2, the analysis of the *nara*-construction may be translated into 4DS in the following way. Assuming that *nara* triggers movements of NP1 and NP2 into the higher functional projections as before, NP1 is moved into FP1-Spec and NP2 into FP2-Spec, as repeated below:

- (25) *gengogakusya nara daihyoo-da.*
linguists NARA representative-COPULA
'As for linguists, given their characteristics, it is appropriate and suitable for them to be representative'.
- (26) $[_{FP1} linguists_i nara [_{FP2} representatives_j F2 [_{TopP} t_i Top [_{TP} t_i [_{vP} t_i [_{SC} t_i t_j] da_{vP} T]]]]]$

Then, the MC requires that NP1 and NP2 be mapped into the appropriate dimensions depending on their syntactic height. In addition, because *nara* induces intensionality (see the discussions in Section 2 and Section 4), it should be mapped into 4D, where it obtains an intensional interpretation. Given that NP1 is located in Spec of FP1 whose head *nara* occupies, it is mapped into 4D and bound by an intensional operator, receiving an intensional interpretation, as required. Also, we saw in Section 4 that NP2 is positioned in the next higher functional projection FP2. If so, NP2 should be mapped into the next higher dimension 3D, where it is bound by a generic operator and receives a generic interpretation, as desired. Finally, a lower copy of NP1 left in TopP-Spec is mapped into the discourse dimension 2D and bound by a topic operator, receiving a topic interpretation. As a result, the *nara*-construction expresses the very rich interpretation. I schematized the analysis of the *nara*-construction with 4DS below:



4DS is clearly responsible for the unique interpretations of *nara* and relevant NPs. However, there remains an important question: why does *nara* trigger movements of NP1 and NP2? Actually, these movements result in boosting NP1 *linguists* and NP2 *representatives* from the simple lowest interpretation 1D into the multiple-dimensions in 4DS, suggesting that a warping operation is relevant to these movements since only this operation boosts a lower-dimensional linguistic object into higher dimensions.⁵⁹ As argued in 5.3, a warping operation should be restricted to merge or move of functional heads within the CP-domain in narrow syntax. When a specifier position of functional heads needs to be filled, syntactic elements are merged into the specifier position of these functional heads through movement or base-generation. Interestingly the same syntactic operations are observed in the analysis of the *nara*-

construction here. The functional head *nara* is inserted into the head of FP1 and NP1 and NP2 are subsequently moved into functional projections within the CP-domain. For this reason, I assume that the merge of *nara* into F1-head and the subsequent movements of NP1 and NP2 are warping operations.

Now, the question becomes general. What drives warping operations? Given the observation of Japanese copula constructions in Section 2, a warping operation should be optional.⁶⁰ If so, a warping operation needs to satisfy IC (Chomsky 2001 and 2004a) to apply.

In the following subsection, I will specify IC which justifies optional syntactic operations, taking the analysis of Object Shift (OS) in Chomsky (2001) as a starting point. In 6.2, I will propose that an only possible warping operation is *Throwing in*, which inserts functional heads within the CP-domain from the Lexicon into a syntactic derivational workspace. Also, I will indicate that *Throwing in* exhibits a couple of interesting and desirable consequences. Finally, I will close this section by noting the parallel consistency of syntax-semantics and asymmetry between the numeration/TP/simple dimension on one side and *Throwing in*/CP/multiple-dimensions on the other side.

6.1 New Outcome Condition

OS is an optional movement operation observed in Scandinavian languages. Examples of OS are given below:

- (43) Examples of OS (Holmberg 1999)
- a. *Jag kysste henne inte* [_{VP} *t_v t_o*].
I kissed her not
'I did not kiss her.'
 - b. **Jag har henne inte* [_{VP} *kysst t_o*].
I have her not kissed
 - c. *Jag har inte* [_{VP} *kysst henne*].
I have not kissed her
'I have not kissed her.'
- Swedish*

As is well known, OS can only apply when certain conditions are met. The most familiar condition is Holmberg's Generalization (Holmberg 1986) in (44):

- (44) OS is possible iff there is a V-T movement.

Holmberg (1999) replaces (44) with the new generalization in (46) by raising the contrasts in (45), which indicate that OS is impossible when an indirect object remains within VP:

- (45) a. *Jag gav inte* [_{VP} *t_v Elsa den*].
I gave not Elsa it
'I did not give Elsa it.'

- b. **Jag gav den inte* [_{VP} *t_v* *Elsa t_o*].
 I gave it not Elsa
- c. *Vem gav du den inte* [_{VP} *t_v* *t_{IO}* *t_o*]
 Who gave you it not
 'To who did not you give it?'

- (46) New Holmberg's Generalization (Chomsky 2001. cf. Holmberg 1999)⁶¹
- (i) OS is a phonological operation that satisfies the condition (ii) and is driven by the semantic interpretation of the shifted object (new information specificity/ definiteness, focus, etc.; call the interpretive complex INT).
 - (ii) OS cannot apply across a phonologically visible category asymmetrically c-commanding the object position except adjuncts.

However, this new Holmberg's generalization faces a conceptual problem, because it requires look-ahead property.⁶² Thus, Chomsky abandons it and assumes that OS is a movement operation of object into v^*P -Spec, proposing the following analysis (2001. (60–61)):

- (47) Optional operations can apply only if they have an effect on outcome: in the present case, v^* may be assigned an EPP-feature to permit successive-cyclic \bar{A} -movement or Int (under OS).
- i. v^* is assigned an EPP-feature only if that has an effect on outcome.
 - ii. The EPP position of v^*P is assigned Int.
 - iii. At the phonological border of v^*P , XP is assigned Int'.

Because the optional operation OS only applies when the EPP position of v^*P is assigned Int, the application of OS should create a new interpretation and have an effect on outcome. Thus, OS applies, only when the EPP position of v^*P is assigned Int and creates new semantic outcome under Chomsky's proposal.

Given that optional syntactic operations are constrained in that they can apply freely only when satisfying IC, it is theoretically preferred to generalize Chomsky's proposal into other cases of syntactic operations. I restate Chomsky's proposal as the New Outcome Condition in (48) by limiting my attention to an influence on the outcome of the Semantic Component:

- (48) New Outcome Condition (NOC)
- An optional syntactic operation applies freely only if its application influences the interpretation of this output by the Semantic Component.

I assume that a warping operation is possible only if its application satisfies the NOC, because it is optional.

6.2 *Throwing in* as a warping operation⁶³

From the discussion in the previous subsection, it is natural to think that a warping operation is possible only when its application satisfies IC, such as the NOC, because

it is an optional operation. Given 4DS, it is clear that it applies freely when available; since it always results in boosting syntactic materials into the higher dimensions in 4DS and these syntactic materials pick up new interpretations in these dimensions, its application always influences the interpretation of the output by the Semantic Component. It follows that a warping operation always satisfies the NOC. However, this does not answer the first question: what drives warping operations?

As argued in the beginning of this section, a warping operation is restricted to merge (and move) of functional heads within the CP-domain. Thus, in order to answer what drives a warping operation, it may be helpful to investigate into the trigger of merge of these functional heads.

First, one may argue that these functional heads should be merged with an existing syntactic object, because they appear in the numeration. However, this argument is somewhat questionable. Normally, it is assumed that the numeration is a lexical selection from the Lexicon (Chomsky 1995). Given that lexical items are initially merged in θ -positions (cf. Chomsky 1995, 2000 and 2001), this choice is presumably based on selectional requirements and θ -properties of syntactic heads (cf. Chomsky 2000 and 2004a, Collins 2002 and Uriagereka 1999).⁶⁴ Because selectional requirements and θ -properties are necessarily satisfied, lexical verbal heads and their arguments always appear in a sentence. The same thing is applied to light verbs: light verbs should appear always when selectional requirements require the external argument and Agent θ -role is selected in an event structure (or an argument structure). Thus, the numeration should consist of only syntactic elements which an event structure (or an argument structure) of lexical heads necessitates (see Chapter 2 in Munakata 2005 for the discussion). In addition, given that events are needed to be anchored to a specific time as argued in 5.2, it is natural to think that the numeration contains T, suggesting that a syntactic structure created from the numeration is TP, not CP. This is reasonable given 4DS, because the simple lowest dimension 1D corresponds to the lexical maximal projection TP, where all of lexical properties are satisfied, which functional heads within the CP-domain are irrelevant.

On the other hand, functional items within the CP-domain are optional. It is generally unnecessary for them to appear. The sentence may be uttered without a sentential-topic and a focus element, for example. In addition, these functional items may freely appear in the structure, whatever selectional requirements and θ -properties are. Thus, it is unnatural for the numeration, which is considered to be based on lexical requirements and θ -properties of syntactic heads, to contain these functional items within the CP-domain, since nothing seems to require these functional items to always appear and to be contained in the numeration. If so, these functional items need to be inserted derivationally by some syntactic operation.

Here, following Munakata (2005), I assume that functional heads within the CP-domain can be inserted only by *Throwing in*, the lexical insertion of functional heads. Essentially, *Throwing in* inserts functional heads within the CP-domain directly from the Lexicon into the syntactic computational workspace, generating functional projec-

tions within the CP-domain. In addition, I propose that *Throwing in* is available only when syntactic elements in the numeration are exhausted and the lexical maximal projection TP is formed.

Because functional heads within the CP-domain are inserted only by *Throwing in*, it follows that only *Throwing in* can create functional projections within the CP-domain. Then, the syntactic computational mechanism must resort to *Throwing in* to map syntactic materials into the multiple dimensions in 4DS. If so, it follows that application of *Throwing in* is indispensable in order for syntactic materials to obtain the interpretations only available in the multiple-dimensions, for example, discourse-oriented properties, genericity and intensionality. In short, *Throwing in*, which is an only possible warping operation, is syntactically responsible for the mapping of syntactic materials into the multiple-dimensions. This application of *Throwing in* clearly satisfies the NOC.

Moreover, *Throwing in* explains why the interpretations in multiple-dimensions are optional. This is because *Throwing in* is a warping operation which is optional and only it can give rise to the interpretations involved in these dimensions.

Finally, let us explain the *nara*-construction with *Throwing in*. The example of the *nara*-construction is repeated below:

- (25) *gengogakusya nara daihyoo-da.*
 linguists NARA representative-COPULA
 ‘As for linguists, given their characteristics, it is appropriate and suitable for them to be representative’.
- (26) [_{FP1} linguists_i *nara* [_{FP2} representative_j F2 [_{TopP} *t_i* Top [_{TP} *t_i* [_{VP} *t_i* [_{SC} *t_i* *t_j*] da]_{VP} T]]]]]

As mentioned at the top of this section, due to its inherent intensionality, *nara* is a functional head which must be interpreted in 4D in 4DS.⁶⁵ An application of *Throwing in* to *nara* results in moving NP1 (*gengogakusya* ‘linguist’) and NP2 (*daihyoo* ‘representative’) into the functional projections within the CP-domain. This application of *Throwing in* clearly satisfies the NOC, because it results in warping *nara* and these NPs into higher dimensions in 4DS. In particular, NP1 is moved into the Spec-FP1, perhaps because *nara* necessitates its specifier position to be filled due to its selectional requirement, and mapped into 4D, receiving an intensional interpretation. Supposing that *nara* selects the functional head F2, Spec-FP2 is available.⁶⁶ As a result, NP2 is moved into FP2-Spec and mapped into 3D, where it obtains a generic interpretation.

In this subsection, I proposed *Throwing in*. In particular, I claimed that only *Throwing in* can generate functional projections within the CP-domain. In addition, I maintained that the only possible warping operation is *Throwing in*, which might suggest that warping operations (i.e. *Throwing in*) are triggered by the demand to generate functional projections within the CP-domain and, consequently, map syntactic materials into the multiple-dimensions in 4DS.

Before closing this section, I would like to discuss the parallel consistency between narrow syntax and the Semantic Component and the asymmetry between numeration/TP/simple-dimension and *Throwing in*/CP/multiple-dimensions, as well as why *Throwing in* exists.

6.3 Parallelism and asymmetry

In the previous subsection, I suggested that the numeration corresponds to the lexical maximal projection TP. TP corresponds to 1D in 4DS, linguistic objects of which function as the basis of every linguistic dimensional object and receive an existential interpretation. Also, I claimed that a lexical choice in the numeration is based on selectional requirements and θ -properties of a lexical head and thus the numeration is obligatory. For this reason, the numeration is the source of TP, where these lexical properties are satisfied. In turn, TP is the source of 1D, where I assume syntactic arguments of an event structure must be reflected.

On the other hand, I maintain that functional heads within the CP-domain may be introduced into the syntactic derivational workspace only by *Throwing in*, which means that only this syntactic operation is able to generate functional projections within the CP-domain. Also, I assumed that syntactic materials within these functional projections are mapped into multiple-dimensions in 4DS due to the MC, which suggests that these functional projections correspond to the multiple-dimensions in 4DS. Moreover, I argued that *Throwing in* is optional and thus needs to satisfy the NOC to apply, which results in the optionality of the functional projections within CP-domain. Because these functional projections are optional, the corresponding interpretations in multiple-dimensions are optional, which also derives from the fact that *Throwing in* is optional, because it is the only possible warping operation.

Looking into issues discussed above more seriously, we can see that there exists an interesting asymmetry between obligatoriness and optimality across input, syntax and semantics, which I call the parallel consistency and asymmetry, as illustrated below:

(49)	Input	Syntax	Semantics
<i>obligatory</i>	numeration	TP (lexical projections)	1D (event + tense)
<i>optional</i>	<i>Throwing in</i>	CP (functional projections)	multiple-dimensions

As we saw, the parallel consistency of syntax and semantics is rather natural because it is regulated by the MC and, perhaps, comes from the internal consistency within the Language Faculty, whose source is not certain. However, there are few reasons why there exists the consistency between the numeration and 1D, even though the syntactic computational mechanism maps syntactic elements in the numeration into 1D via TP. Also, there is some doubt as to why there is the consistency between *Throwing in* and multiple-dimensions. Seemingly, we need a principled explanation.

Actually, there is a hint for this consistency. As seen in the previous subsection, lexical choice of the numeration is determined based on selectional requirements

and relevant θ -properties of an event structure of a certain lexical head. Since TP is generated from syntactic items in the numeration, it may be said that it syntactically corresponds to an event structure. Also, 1D is required to reflect every argument of an event structure and an event structure itself. This is reasonable given that TP, which syntactically reflects all arguments of an event structure, is mapped into 1D because of the MC. Thus, an event structure and its selectional requirements are responsible for the obligatory characteristic of the numeration, TP and 1D and the parallel consistency among these. Now, one question arises. Why does an event structure need to be satisfied?

Note that an event structure and relevant lexical properties involving θ -properties and selectional requirements are conceptual matters of language (cf. Uriagereka 1999). In addition, given that a sentence is supposed to express an event, syntactic elements which an event structure selects and θ -marks are obligatory in nature and should be always reflected in the numeration. Then, it is natural to think that the external system requires that the Language Faculty satisfy selectional requirements of an event structure in some way as an IC (cf. Uriagereka 1999 and Munakata 2005).

Here, I propose that the Conceptual-Intentional System is actually divided into a Conceptual-System and an Intentional System, following Uriagereka (1999). In particular, I assume that the Conceptual System is connected to the numeration, whereas the Intentional System is connected to the Semantic Component.⁶⁷ Then, it is natural that the numeration is formed based on selectional requirements and θ -properties of lexical heads, if the Conceptual System requires that the numeration should reflect conceptual matters. Also, we can give a principled explanation to why an argument NP must be initially merged into a θ -position, if the Conceptual System imposes an IC regulating an initial merge of an argument NP on the syntactic computational mechanism through the numeration and this IC requires that narrow syntax strictly reflects conceptual matters such as selectional requirements and θ -properties of a lexical head, forcing the syntactic computational mechanism to initially merge an argument NP based on the θ -grid. This is why the consistency among the numeration, TP and 1D is captured and the selectional requirements and θ -properties of an event structure are observed among them (see Chapter 2 in Munakata 2005 for the discussion).

How about the optional side? An optional side reflects intentional matters, which are also linguistically optional in that people does not express intention. For example, people do not always use a sentential topic or refer to a focused element even though these can be expressed by a topic-marker and a focus-related position and belong to discourse-oriented properties in 2D in 4DS, which are clearly intentional matters. The optional syntactic operation *Throwing in* is also relevant to intentional matters, because its application results in creating the intentional interpretations available in the multiple-dimensions of 4DS. Thus, it is safe to assume that the Intentional System deals with the optional side of the Language Faculty, necessitating the consistency

among *Throwing in*, functional projections within the CP-domain and multiple-dimensions in 4DS.

Here, I would like to answer why *Throwing in* is necessary and intimately related to functional projections within the CP-domain and multiple-dimensions in 4DS. In order for the external cognitive systems to reflect its relevant properties on narrow syntax, an input is necessary. Because the Conceptual System is connected to the numeration, which is an input to narrow syntax, it can reflect its properties.

On the other hand, because the Intentional System is connected to the Semantic Component, which receives a syntactic output from narrow syntax, there is no input corresponding to the properties of the Intentional System. Thus, the Language Faculty should resort to other syntactic operations which may function as input to narrow syntax in order to reflect the properties of the Intentional System in narrow syntax. This syntactic operation is *Throwing in* functional heads within the CP-domain. Then, the Intentional System can reflect its properties only through *Throwing in* and the Language Faculty satisfies these properties of the Intentional System by this syntactic operation. Therefore, *Throwing in* is necessary. For this reason, it is optional because the properties of the Intentional System are optionally expressed in language unlike the properties of the Conceptual system. Also, it has only influences on the properties of the Intentional System reflected by the multiple-dimensions in 4DS, because *Throwing in* always results in warping relevant syntactic elements into these multiple-dimensions.

I have established the new parallel consistency and asymmetry, which is illustrated below:⁶⁸

(50)	Obligatory Side	Optional Side
Relevant External System	Conceptual System	Intentional System
Input	Numeration/ lexical items	<i>Throwing in</i> / functional items
narrow syntax	TP/ lexical maximal projection	CP/ functional projections
Semantic Component	1D/ simple dimension	multiple-dimensions

As shown, this parallelism consistency and asymmetry originates from IC and the properties of the external systems. On the obligatory side, conceptual matters are indispensable for language and consequently the Conceptual System always requires that conceptual properties are reflected in narrow syntax and 1D, whereas on the optional side, intensional matters are optionally expressed in language and thus the Intentional System sometimes necessitates that intentional properties are reflected in narrow syntax and the multiple-dimensions in 4DS.

Again, the picture in (50) seems to pertain to the Strong Minimalist Thesis, showing that the Language Faculty is an optimal solution to IC. We can give a principled explanation to the asymmetry and consistency depicted in (50).

7. Conclusion

In this paper, I dealt with Japanese copula constructions, focusing on the *nara*-construction. In particular, I specified the characteristics of the *nara*-construction based on Carlson (1989) and the differences between the *nara*-construction and the other copula constructions. Also, I have analyzed the *nara*-construction as well as the standard-*wa* topic-construction and the nominative copula-construction, utilizing the MC and the hierarchicalized restrictive clause.

Then, I proposed the semantic interpretative mechanism 4DS. In particular, I suggested that the Language Faculty uses a topological mechanism, which can be thought as a general property of natural science, to build 4DS. This is a really interesting result in view of the Strong Minimalist Thesis and Ontological Minimalism. Also, I argued that 4DS semantically and conceptually motivate the split CP.

Moreover, I proposed *Throwing in*. Especially I argued that only *Throwing in* can generate functional projections within the CP-domain. Also, I suggested that it is an only possible warping operation, which warps lower dimensional linguistic objects into higher dimensions in 4DS, where they receive new interpretations.

Finally, I derived the parallel consistency and asymmetry observed within the Language Faculty from IC and the different properties of the Conceptual System and the Intentional System, as summarized in (50). The result is consistent with the Strong Minimalist Thesis that the Language Faculty is an optimal solution to IC.

To conclude this paper, generative linguists may utilize the Strong Minimalist Thesis and Ontological Minimalism as useful compasses to investigate the Language Faculty and to study linguistic phenomena. Finally, *beyond explanatory adequacy* is not illusion, but a true research object in the linguistic study, which we can achieve in future based on the Strong Minimalist Thesis and Ontological Minimalism.

Notes

* This paper is presented at the Workshop of Minimalist Theorizing held at Indiana University. I would like to thank the audience for helpful comments and suggestions: especially I am thankful to Yoshihisa Kitagawa. Also, I am very grateful to Cedric Boeckx for his editorial work. Moreover, I appreciate Yoshio Endo, Daisuke Inagaki, Maya Kobayashi, Roger Martin, Toshiyuki Ogihara, Christopher Tancredi, Yuji Takano and Akira Watanabe for their helpful comments and suggestions. Especially, I am very grateful to Yoshio Endo, Roger Martin and Christopher Tancredi for very insightful discussions. Finally, I am thankful to Keiko Inada and Akira Nakayama for getting me to notice the *nara*-construction. Needless to say, all remaining errors are of my own.

1. An extended version of Section 2 and 4 appears in Section 3.1 in Munakata (2005), though there I do not adopt Carlson (1989) and have changed the analysis of the *nara*-construction. In particular, I reanalyze the *nara*-construction based on Kratzer (1991) and extend the analysis another type of the *nara*-construction. Also, I do not assign any special status to the NP

following *nara* and attempt to derive the peculiar interpretation of this NP from an implicit modal interpretation of the copular part. See Munakata (2005) in details.

2. The *nara*-construction also seems to have a non-irrealis interpretation in the following sentences in (i-ii):

- (i) *Hideki nara daihyooo o si.ta.*
 Hideki NARA representative ACC did
 ‘As for Hideki, given his properties and behavior, it was appropriate that he served as a representative.’
- (ii) *Hideki nara gakkoo-da.*
 Hideki NARA school-COPULA
 ‘As for Hideki, given his habit and characteristics, it is probable that he is at school.’
- (iii) *sin-da nara yurusu-o.*
 die-Past NARA allow-let.
 ‘If one died, I would forgive him.’

Though I do not discuss this type of the *nara*-construction here, I attribute the lack of the irrealis reading of *daihyoo* to the lack of movement of this NP. Even in these sentences, *nara*-constructions express rather rich meanings and the NP preceding *nara* seems to bear irrealis.

Also, I concentrate on the *nara*-construction appearing in copula sentences in this paper, though I admit that I should change my analysis to deal with the *nara*-construction with verbal predicates or other types of predicates like (iii), because only nominal phrase can be interpreted as *Kind* and predicates do not express a *Kind* in any sense. Thanks to Chris Tancredi for reminding me of this point.

3. Actually, the *nara*-construction licenses counter-factual unlike the topic-construction with *wa*, as shown below:

- (i) (During a trip to England)
Nihon nara pro susi ga tabe-rare.ru-noni.
 Japan NARA sushi NOM eat-can-counter factual
 ‘If this was in Japan, we could eat sushi.’
- (ii) **Nihon-wa pro susi ga tabe-rare.ru-noni.*

Thanks to Toshiyuki Ogihara for pointing this out to me.

4. This sentence also has a standard generic interpretation *every guard stands in front of queen’s palace*, where the subject is interpreted universally. Though this is false, Carlson says that this generic interpretation of *a guard* comes from a *Kind* interpretation of this subject.

5. Carlson says that it is necessary to understand these two levels of intensionality in dealing with the interpretation of certain NPs. Also, according to him, the interpretation of intensionality is related to the aspect of predicates and elements from discourse and, possibly, other respects of context, which I ignore in this paper.

6. To be compatible with Carlson (1989), I will say that an NP is interpreted as intentional, when an intensional operator binds it. Due to this, it can refer to its different stages (i.e. instances) at different places and at different times.

7. Actually, Carlson posits the following representation for *Kind* and assumes that the generic predicate *like sweets* applies to each of John’s friends:

- (i) $\forall x$: friend of John's (x) [[Gn(like sweets)](x)]

In this paper, I do not take the Carlson's analysis in (i).

Also, Carlson assumes that *Kind* individuals can also be interpreted intensionally. However, as discussed, the *unbounded* reading is distinct from the *bounded* reading in that the former clearly expresses intensionality. One relevant fact supporting this idea is that the *Intensional Object* interpretation is easily available when there is an extra sentential constituent in the sentence, which he calls the related constituent, helping pick out instances of an NP assigned an *Intensional Object* interpretation (cf. the adverbial clause in (4b)). Also, in a typical generic sentence with *wa* in Japanese, the subject does not denote its properties, unlike in the *nara*-construction in (1). Rather it refers to instances of the subject, like a *Kind* subject, as seen in (ii):

- (ii) *inu wa juujun-da.*
 dog TOP obedient-Copula
 'Dogs are obedient.'

For this reason, I assume in this paper that *Intensional Object* has the more special status than *Kind* and use intensionality to refer to only an interpretation of *Intensional Object* (i.e. the *unbound* reading of NPs).

8. In Japanese, *gaisikei* 'foreign-owned' is used to refer to a 'foreign-owned company'. It is important to notice that *gaisikei* can refer to employees of a foreign-owned company in the *nara*-construction as shown in (9b), which is impossible in the typical copula constructions in (10–11). I attribute this apparent mysterious reference to the *nara*-construction in general and speculate that *gaisikei* refers to multiple instances of the individuals/entities associated with a foreign-owned company as well as multiple instances of different foreign-owned companies at the same period, though I will not discuss it here due to the limit of space.

9. This sentence is ungrammatical with a genuine topic reading, though grammatical with a contrastive reading under a pair-list context. In this paper, I will only deal with *wa* which is used to express a genuine topic reading or a thematic topic reading, ignoring the focalized contrastive topic reading induced by *wa* (see Munakata 2002 for discussion of this type of *wa*).

10. In the current framework, it may be good to replace VP with ν P, within the Spec of which an external argument is base-generated.

11. Actually, this is not a fault of the Mapping Hypothesis itself, as commented by Chris Tancredi (p.c.). Thus, it is not necessary that this hypothesis deals with syntactic materials within the CP-domain, though this paper tries to incorporate these materials within the CP-domain into the Mapping Hypothesis.

12. I omit the iterative TopP.

13. I assume that syntactic materials outside TP, not VP (ν P/ ν^* P), are mapped into the restrictive clause. The reason I choose TP rather than VP in (18) will be made clear in Section 5. See also note 10.

14. I thank to Chris Tancredi for helping me formulating the hierarchicalized restrictive clause in (19).

15. In this paper, I will ignore the concrete analysis of small clause and tentatively use a flat structure of small clause for convenience. See Heycock (1994) and Cardinatti and Guasti (1995) for the analysis of small clause.

16. It is controversial whether a Japanese NP-*wa* is base-generated (cf. Hoji 1985, Saito 1985 and 1987 and Tateishi 1991) or derived by movement (cf. Kuroda 1992 and Watanabe 2003). Although I assume a movement approach to *wa* in (21), there is no problem for my analysis even if NP-*wa* is base-generated.

17. In this point, I depart from Diesing (1992) who claims that the nuclear scope corresponds to VP/*v*P. I will explain why TP, not VP/*v*P, corresponds to the nuclear scope in Section 5.

18. In Munakata (2005), I do not assume that NP2 is moved into FP2-Spec. Instead, I assume that it is quantified by a modal operator in-situ.

19. In this paper, I only speculate that an intensional operator is associated with FP1 and a generic operator is associated with FP2. Also, I do not identify what F1 and F2 are. Rather, I tentatively assume that F1 is the functional head within the CP-domain related to intensionality and F2 is that related to genericity.

20. As Yoshio Endo pointed out to me, this analysis cannot be applied to the complements of intensional verbs like *look for*, where intensional verbs cause the complements to bear intensionality. I will leave this to a future research.

21. I will give an answer to why an intensional operator binds a variable in the highest restrictive clause and a generic operator binds a variable in the next highest one in Section 5.

22. There is no violation of the Bijection Principle, given that NP1 moves through TopP-Spec into FP1-Spec, leaving a trace within TopP-Spec. This trace is changed into a variable and the MC assures that this variable is bound by a topic operator, because it is positioned within TopP, which corresponds to the restrictive clause of a topic operator in the semantic representation.

23. In the *nara*-construction, it seems that the quantificational adverb *taitei* does not serve as an operator. Rather, this adverb modifies a logical relationship between NP1 and NP2 (if *x* is NP1, then *x* has the relevant properties to NP2). Also, NP2 seems to be bound by a generic operator not an adverbial quantificational operator in (31a), avoiding vacuous quantification by a generic operator, which indicates that NP2 is positioned above TP and mapped into the restrictive clause.

24. See note 23 for what a role *taitei* 'mostly' plays in (32a).

25. In Japanese, multiple topicalizations are possible, though the second topic can be only interpreted as Contrastive-Topic, whose status is controversial as to whether it is truly a topic marker (see Saito 1985, Watanabe 2003 and others).

26. Evidently, it is equivalent to say that the position of NP-*wa* differs depending on whether it receives a generic interpretation or a mere topic interpretation, which implies that there are two types of *wa*. I have little to say about this issue in this paper.

27. It might be said that KGS also lent support to MC and the hierarchicalized restrictive clause, because it clearly shows that *nara* occupies a higher position than *wa* both syntactically and semantically, which these proposals would predict.

28. The same complaints apply to MC: the Mapping Hypothesis is generalized into the MC because a restrictive clause is hierarchicalized. This is a trivial restatement of the relationship between the Mapping Hypothesis and the restrictive clause.

29. Muromatsu (1998) and Castillo (2001) instantiate Uriagereka's idea in the nominal domain. Also see Uriagereka (2002) for a possible implementation of this idea in the verbal domain.

30. More specifically, generative functions of the rules of Euclidean space are applied.
31. Here, I assume that the visual system is a cognitive system and mean that this system can depict these diagrammatical objects as image in the actual world. See also note 54.
32. Admittedly, lowering operations are also plausible in this context and Uriagereka seems to imply that this kind of operation is possible, though I do not deal with this kind of operation in this dissertation.
33. This is a reasonable assumption, because truth-values are usually computed at the level of a proposition.
34. Small clauses are another candidate, though it is uncertain whether they express a proposition. Rather, it may be plausible to think that it simply expresses an event. As below, I will claim that an event needs to be anchored at some specific time (I will assume that an infinitival *to*, whose tense is discussed in detail in Chomsky and Lasnik (1993) and Martin (1996), also expresses a specific time). Because small clauses lack a tense value (cf. Parsons 1990. 15) and their tense should be provided by a matrix or an embedded tense, I exclude them as a possible candidate here.
35. Note that events cover states within the Davidsonian framework.
36. Actually, events are not an appropriate term. Here, I mean an *event structure*, which contains a conceptual representation of an event, an event argument, argument structure and necessary arguments involved in this event (see Munakata 2005 for the relevant issue). Throughout this paper, I refer to an event structure by events.
37. It is normally assumed that T selects vP/v^*P , which express events, as its complement.
38. Ogihara assumes that this specific tense anchor is an implicit temporal adverb like *in the past*. See Ogihara (to appear) for details.
39. Later, I will claim that event participants (namely, arguments) can be boosted up into the higher dimensions by a warping operation, which enables these arguments to obtain more complex interpretations only available in the higher dimensions. See the discussion in the next subsection.
40. Also, I assume that only an extensional interpretation is assigned in 1D, which entails that a proposition is extensional in general.
41. Thanks to Roger Martin for pointing this out to me.
42. According to Hale and Keyser (1993), they partly mean by Unambiguous Projection that the LRS representations embody biunique structural-thematic relationships for all lexical items.
43. This is reasonable given that θ -properties of an event structure are satisfied within vP/v^*P .
44. Ideally, the semantic types that functional applications yield are fixed, depending on which dimension functional applications are associated with. Though I think that this possibility is worth pursuing, I do not discuss this in this paper and will leave it to future research.
45. I speculate that TP, which is equivalent to a proposition in this approach, may be taken as argument of functional applications associated with any dimension, even if it does not belong to this dimension, because of the fact that it is a 1D linguistic object.
46. As will be made clear below, I will claim that 2D and 3D denote extensional worlds like

1D, whereas 4D denotes an intensional world. This indicates that 2D and 3D significantly differ from 4D in semantics. Though I leave this issue to future research, it may be important to consider the following topological rule stated by Uriagereka (2002 (4)):

- (i) If operation $\sim O$ is not closed in system X , applying $\sim O$ to the objects x of X creates new sort of objects x' , so that a new system X' is created with the x' objects, such that X is a part of X' .

If 4DS is created by topological operations observing a similar rule to (i), multiple-dimensions in 4DS are linked to the next dimension in a part-of-relation, which seems to suggest that there is not so much difference among these dimensions.

47. Here, I assume that a specific tense anchor, not a specific place point, functions as a starting point from which events spread over, because events are anchored to this tense anchor in definition (also see the discussion below). I will discuss what events looks like if events are spread over a sequence of places below.

48. Also, I assume a discourse is analyzed in terms of File Change Semantics (cf. Heim 1983).

49. For example, a topic element spreads over (cf. appears in) a sequence of sentences across time (namely, discourse) and a selection of topic is possible when the discourse is established.

50. Individual-level predicates, which describe events (more appropriately, state) originating from individual characteristics like *tall* or *intelligent*, raise no problems in this respect because the truth-values of individual-level predicates are evaluated with respect to tense but not place. For example, it is impossible that John is tall everywhere (cf. *#John is tall in Japan but not in America*) in the actual world but it is probable that John was not tall when he was a baby.

Also, a generic interpretation of a stage-level predicate is excluded here. As made clear soon, I assume that a generic interpretation is a by-product of 3D.

51. Because of the existence of *now*, time is fixed to an utterance time.

52. I call a combination of a specific tense and specific place as *stage*. Thus, it is appropriate to say that, when stage-level predicates express events, it must be anchored to a specific stage for its truth value to be evaluated.

53. Here, I use a possible world instead of a real world, because language an refer to an imaginary entity of a possible world and this entity may have a generic import, as indicated in (i) (see Heim and Krazier 1998):

- i. Unicorns have a horn.

54. One may wonder why the upper limit of the dimensional structure of the Semantic Component is 4D and there is no higher dimension than 4D, even though it is mathematically possible to create much higher dimensional objects than 4D and dimensional objects higher than 4D physically exist in the actual world. One possibility is that the cognitive systems of human being cannot deal with the dimension higher than 4D and the same restriction is applied to the Language Faculty, one of the cognitive systems. For example, the visual system may be able to deal with 4D-images but it seems that it cannot handle higher dimensional objects than 4D.

Another possibility is that because language does not contain higher dimensional linguistic objects than 4D, the Language Faculty does not need to deal with this kind of dimensional objects. In fact, it seems that there is no linguistic object that requires higher dimensions than intensionality. Or maybe 4D is conceptually suitable and easy for the cognitive system to deal

with. For this reason, objects like image and language are fitted into the four-dimensional structure. Consequently, the Language Faculty makes use of 4DS. The answer to this question is quite complicated and seems an empirical matter. In addition, it is possible that cognitive systems differ in this point (see also Uriagereka 2002 for the discussion). Thanks to Roger Martin and Chris Tancredi for the discussion of this issue.

55. In the case that CP is split into more than three projections, these must be distinguished into three zones of functional projections to be mapped appropriately into the multiple-dimensions in 4DS. In this light, if the forty seven functional categories which Cinque (1999) proposes turn out to be necessary, they should be categorized into three types.

56. As is clear, I also assume that a warping operation may boost an n -dimensional object into the higher $n+\alpha$ ($4 > \alpha > 1$) dimension, which is mathematically possible and plausible. For example, lines can combine directly into 3-d shapes, as with axes. Thanks to Chris Tancredi for reminding me of this point.

57. Here, I understand Uriagereka to mean syntactic structures by “syntactic expressions” and take a “semantically more complex object” to be a *warped object*, though I might be wrong.

58. Agree and Delete are excluded here, because these syntactic operations rather simplify syntactic structures by valuing or deleting uninterpretable features. Also, I ignore copy and pied-piping which are assumed to be part of move. See Chomsky (2001), Nunes (2004) and Watanabe (2006) for discussion.

59. For example, if no movement is involved as in nominative-*ga* copula constructions, which repeated below, the sentence and NPs can only get an existential interpretation:

- (23) *gengogakusya ga daihyoo-da.*
 linguists Nom representative-Copula
 ‘Linguists are representatives.’

60. If obligatory, NP1 and NP2 are always moved and mapped into the higher dimensions, which makes it impossible that these NPs receive an existential interpretation, contrary to the facts.

61. In fact, Holmberg (1999) says that OS is a stylistic operation, applying in a component of grammar called *Stylistic Syntax*, which deals with the output of what he calls *Formal Syntax*. According to him, movement in *Stylistic Syntax* is restricted to adjunction and so-called stylistic movement including stylistic fronting, which is normally assumed post-syntactic phenomenon. Because he says that OS is a PF-operation, his analysis of OS cannot escape from a look-ahead problem.

62. See Chomsky (2001) and Bobaljik (2002) for detail.

63. See Munakata (2005) for the detailed proposal of *Throwing in* and arguments for it.

64. Uriagereka (1999) correctly points out that some justification is necessary to explain why the numeration as well as an initial merge of lexical items is based on selectional requirements and θ -grids. He notes that this problem is solved if the numeration reflects conceptual matters (e.g. conceptual structure of lexical items), including an argument structure. See Uriagereka (1999) and Chapter 2 in Munakata (2005) in details.

65. I assume that the Lexicon contains the information about which dimension functional heads within the CP-domain are interpreted in.

66. I speculate that the insertion of F2 is triggered by *Throwing in nara* in a bottom-up fashion, perhaps due to its selectional requirement. Maybe, this selectional requirement is justified by the semantic representation of *Intensional Object* in (7). In (7), the generic property of liking sweets, which may be thought of as a 3D property and syntactically related to F2, is attributed to the interpretation of *Intensional Objects* of the subject NP.

67. See Section 2.3 in Munakata (2005) in details.

68. I show in Munakata (2005) that the picture in (50) has several interesting consequences, including the formation of phases. See Section 2.5 in Munakata (2005) for this issue.

Also, note that the Intentional System always deals with the linguistic output (i.e. the semantic interpretation of sentences) accessing the Semantic Component.

References

- Belletti, A. (ed.). 2004. *Structures and Beyond: The cartography of syntactic structures*, Vol. 3 [Oxford Studies in Comparative Syntax]. Oxford: OUP.
- Bobaljik, D. J. 2002. A-chains at the PF-interface: Copies and 'covert' movement. *Natural Language and Linguistic Theory* 20: 197–267.
- Cardinatti, A. and T.M. Guasti (eds). 1995. *Small Clauses* [Syntax and Semantics 28]. New York NY: Academic Press.
- Carlson, N. G. 1989. On the semantics composition of English generic sentences. In *Properties, Types and Meaning*, G. Chierchia, B. Partee and R. Tuner (eds.), 167–192. Dordrecht: Kluwer.
- Carlson, N. G. and J.F. Pelletier. (eds). 1995. *The Generic Book*. Chicago IL: University of Chicago Press.
- Castillo, C. J. 2001. Possessive Relations and the Syntax of Noun Phrases. PhD dissertation, University of Maryland.
- Chierchia, G. 1995. *Dynamics of Meaning: Anaphora, presupposition, and the theory of grammar*. Chicago IL: University of Chicago Press.
- Chomsky, N. 1986. *Knowledge of Language: Its nature, origin and use*. New York NY: Praeger.
- Chomsky, N. 1994. Bare phrase structure. In *Government and Binding Theory and the Minimalist Program*, G. Webelbuth (ed.), 385–439. Oxford: CUP.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge, MA.: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2004a. Beyond explanatory adequacy. In A. Belletti (ed.), 104–131.
- Chomsky, N. 2004b. *The Generative Enterprise Revisited: Discussion with Riny Huybregts, Henk van Riemsdijk, Naoki Fukui and Mihoko Zushi: With a new foreword by Noam Chomsky*. Berlin: Mouton de Gruyter.
- Chomsky, N. and Lasnik, H. 1993. The theory of principles and parameters. In *Syntax: An international handbook of contemporary research*, J. Jacobs, A. von Stechow, W. Sternefeld and T. Vennemann (eds), 506–569. Berlin: Walter de Gruyter.

- Cinque, G. 1999. *Adverbs and Functional Heads: A cross-linguistic perspective*. Oxford: OUP.
- Collins, C. 2002. Eliminating labels. In *Derivation and Explanation in the Minimalist Program*, D. S. Epstein and D. Seely (eds), 42–64. Oxford: Blackwell.
- Davidson, D. 1967. The logical form of action sentences. In *The Logic of Decision and Action*, N. Rescher (ed.), 81–95. Pittsburgh PA: University of Pittsburgh Press.
- Diesing, M. 1992. *Indefinites*. Cambridge MA: The MIT Press.
- Hale, K. and S.J. Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In *View from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, K. Hale and S. J. Keyser. (eds), 51–109. Cambridge MA: The MIT Press.
- Heim, I. 1983. File change semantics and the familiarity theory of definiteness. In *Meaning, Use and Interpretation of Language*, R. Bäuerle, C. Schwarze and A. von Stechow (eds), 164–189. Berlin: Mouton de Gruyter.
- Heim, I. and A. Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
- Heycock, B. C. 1994. *Layers of Predication: The non-lexical syntax of clauses*. New York: Garland.
- Hoji, H. 1985. Logical Form Constraints and Configurational Structures in Japanese. PhD dissertation, University of Washington.
- Holmberg, A. 1986. Word Order and Syntactic Features in the Scandinavian Languages and English. PhD dissertation, University of Stockholm.
- Holmberg, A. 1999. Remarks on Holmberg's generalization. *Studia Linguistica* 53: 1–39.
- Huang, C-T. J. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531–574.
- E. Kiss, K. 1998. Identificational focus versus information focus. *Language* 74: 245–273.
- Koopman, H. and D. Sportiche. 1982. Variables and the bijection principle. *The Linguistic Review* 2: 139–160.
- Kratzer, A. 1991. Modality. In *Semantics: An international handbook of contemporary research*, A. von Stechow and D. Wunderlich (eds), 639–650. Berlin: Walter de Gruyter.
- Krifka, M, J.F. Pelletier, N.G. Carlson, G. Link and G. Chierchia. 1995. Genericity: An introduction. In G. N. Carlson and F. J. Pelletier (eds), 1–124.
- Kuroda, S. 1992. *Japanese Syntax and Semantics*. Dordrecht: Kluwer.
- Martin, R. 1996. A Minimalist Theory of PRO. PhD dissertation, University of Connecticut.
- Martin, R. and J. Uriagereka. 2000. Some possible foundations of the minimalist program. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 1–29. Cambridge MA.: The MIT Press.
- Munakata, T. 2002. Contrastive-topic *wa* as focus interpretation operator. In *Working Papers in Bilingualistics: Papers in syntax and semantics*, Y. Endo, R. Martin and H. Yamashita (eds), 21–38. Yokohama: Biolinguistics Association at Yokohama National University.
- Munakata, T. 2005. *Throwing in and Kicking out: Functional projections within the left periphery*. PhD dissertation, Yokohama National University.
- Muromatsu, K. 1998. On the Syntax of Classifiers. PhD dissertation, University of Maryland.
- Nunes, J. 2004. *Linearization of Chains and Sideward Movement*. Cambridge MA: The MIT Press.
- Ogihara, T. To appear. Tense, adverbials and quantification. In *Negation, Tense and Clausal Architecture: Cross-linguistic investigations*, R. Zanuttini, H. Campos, E. Herburger and P. Portner (eds), Georgetown: Georgetown University Press.
- Parsons, T. 1990. *Events in the Semantics of English: A study in subatomic semantics*. Cambridge MA: The MIT Press.

- Puskas, G. 1997. Focus and the CP domain. In *The New Comparative Syntax*, L. Haegeman (ed.), 145–164. London: Longman.
- Rizzi, L. 1997. The fine structure of the left periphery. In *Elements of Grammar: Handbook in generative syntax*, L. Haegeman (ed.), 281–337. Dordrecht: Kluwer.
- Rizzi, L. (ed.). 2004. *The Structure of CP and IP: The cartography of syntactic structures*, Vol. 2 [Oxford Studies in Comparative Syntax]. Oxford: OUP.
- Saito, M. 1985. Some Asymmetries in Japanese and Their Theoretical Consequence. PhD dissertation, MIT.
- Saito, M. 1987. Three notes on syntactic movement in Japanese. In *Issues in Japanese Linguistics*, T. Imai and M. Saito (eds), 301–350. Dordrecht: Foris.
- Tateishi, K. 1991. The Syntax of ‘Subjects’. PhD dissertation, University of Massachusetts.
- Tenny, C. and J. Pustejovsky. 2000. A history of events in linguistic theory. In *Events as Grammatical Objects: the converging perspectives of lexical semantics and syntax*, C. Tenny and J. Pustejovsky (eds), 3–37. Stanford CA: CSLI.
- Uriagereka, J. 1999. In defense of deep-structure. Ms., University of Maryland.
- Uriagereka, J. 2002. Warps: Some thoughts on categorizations. In *Derivations: Exploring the dynamics of syntax*, J. Uriagereka, 288–317. London: Routledge.
- Watanabe, A. 2003. Wh and operator constructions in Japanese. *Lingua* 113:519–558.
- Watanabe, A. 2006. The pied-piper feature. In *Wh-Movement on the Move*, L. Cheng and N. Corver (eds). Cambridge MA: The MIT Press.

Weak pronouns, object shift, and multiple spell-out: Evidence for phases at the PF-interface*

Marc Richards
University of Cambridge

Abstract

This paper seeks to provide evidence that the phase boundaries defined by Chomsky's *Phase Impenetrability Condition* delimit a phonological as well as syntactic unit, as expected if phasal domains are separate Spell-Out objects. The main claim is that the natural PF-correlate of introducing a syntactic phase boundary, in terms of the prosodic hierarchy of (i.a.) Selkirk 1995, is the introduction of a φ -boundary, yielding a *Maximal φ Condition* such that a phonological phrase can be no larger than a syntactic phase. I demonstrate that this condition, when applied to the domain of pronominal Object Shift (OS) in Germanic, allows a simple account of the distribution of weak-pronominal objects, one that follows simply from their prosodic deficiency. In particular, the obligatoriness of pronominal OS and its sensitivity to basic word-order type (VO/OV) derives immediately from phase-cyclic mapping to PF, lending compelling syntax-external support to Chomsky's notion of the phase and, more generally, to the phase-based program of minimalist theorizing.

1. Introduction

Chomsky (2000, 2001, 2004, 2005a) argues on conceptual and empirical grounds that the syntactic derivation is composed of a number of smaller units, called *phases*, which are identified with the 'propositional' categories CP and (transitive) ν P. Each phase represents a point at which the syntactic object is accessed and evaluated ('spelt out') by the interface components PF and LF, thereby rendering the domain of the previous phase inaccessible to further operations in the syntax (in accordance with the *Phase Impenetrability Condition* (PIC), to which we presently return). This single-cycle, multiple Spell-Out model of phasal derivations (see Uriagereka 1999 for an independent proposal along similar lines) has since spawned a rich line of enquiry in the minimalist literature, with many authors reworking and re(de)fining Chomsky's notion of the phase to produce neat and compelling syntactic analyses of a vast range of empirical phenomena (including *wh*-copying, A- and A-bar reconstruction, locality

and island constraints, *that*-trace effects, Merge-over-Move effects, covert movement and QR, object shift, impersonal passives, preposition-stranding, to name just a few).¹

However strong the syntactic evidence for phases, though, there is still a relative paucity of work arguing for their existence beyond the syntax and at the interfaces themselves. This is a potentially troubling imbalance, since if the domain of a phase is a separate Spell-Out unit, then we should equally expect to find evidence for the reality of this unit on the phonological side of the PF-interface (such that, as I will argue below, a phonological phrase (φ) can be no larger than a syntactic phase, cf. (1)). That is, if phases compose interface representations, then evidence from the phonological side of the syntax-PF interface should converge with the syntactic evidence to show that Spell-Out does indeed apply cyclically to these units (Simpson & Wu 2002 make a similar point).²

This paper aims to show that the phase boundaries defined by Chomsky's PIC do indeed delimit a phonological as well as a syntactic unit, a hypothesis that can be stated as in (1).

(1) *Maximal φ Condition*

A phonological phrase φ (... ω , etc.) can be no larger than a phase.

In particular, I demonstrate that this condition, when applied to the domain of pronominal Object Shift (OS) in Germanic, allows a simple account of the distribution of weak-pronominal objects. OS therefore provides direct evidence for (1), as expected if phases have phonological as well as syntactic effects. To the extent that this proposal is successful, it lends compelling, syntax-external support to Chomsky's notion of the phase, to his identification of phase heads with the categories C and v^* , and thus more generally to the phase-based program of minimalist theorizing.

In section 2 I present the basic paradigm of Germanic OS and the particular pronoun-related problem which any adequate theory of OS must address. A brief review of some recent approaches that may be applied to this problem leads to the suggestion that a solution should be sought at PF. Section 3 develops the proposal, a natural extension of the PIC to the phonological domain, and presents independent motivation and support from *n't*-contraction, ECM constructions and complementizer deletion. I return to the OS paradigm in section 4, and show that the facts of weak-pronoun distribution now follow simply from the prosodic deficiency of these elements. Section 5 summarizes and concludes.

2. The data: object displacement in North and West Germanic

As is well known, all the modern Germanic languages, with the exception of English (though see Johnson 1991, Lasnik 1999 and others for a contrary view), exhibit short leftward displacement of definite objects to a VP-external position, albeit to varying

degrees and under varying conditions. Although a full summary of the huge literature on this topic and the dialectal microvariation that has been uncovered cannot be attempted here (the reader is referred to Holmberg 1999, Thráinsson 2001 and Bobaljik 2002 for detailed recent surveys and analyses), the core patterns which must be accounted for seem reasonably clear. In the OV languages (German, Dutch, Afrikaans), Object Shift (or ‘short’/‘A-’scrambling) of full DPs and pronouns alike is possible (and, in some cases, obligatory; see below) irrespective of the position of the main, lexical verb (cf. (2a,d)), whereas in VO Scandinavian, OS is permitted only where the lexical verb is finite and moves out of the VP, a restriction known as Holmberg’s Generalization (HG).³ Further, the Scandinavian languages except Icelandic allow only pronominal objects to undergo OS (cf. (2b) vs. (2c)), and, indeed, pronominal OS is obligatory in Scandinavian (at least in Danish, Norwegian and Icelandic). This key difference between the apparent optionality of full-DP OS (in those languages that allow it at all)⁴ and the obligatoriness of pronominal OS is highlighted in the familiar data set in (2), based on Thráinsson 2001.

(2) Core data

- a. *Der Student las (es/das Buch) nicht (das Buch/*es)*

[German]
- b. *Nemandinn las (hana/bókina) ekki (bókina/*hana)*

[Icelandic]
- c. *Studenten læste (den/*bogen) ikke (bogen/*den)*

[Danish]

The-student read (it/the-book) not (the-book/it)

‘The student didn’t read it/the book.’
- d. *Der Student hat (es/das Buch) nicht (das Buch/*es) gelesen*

[German]
- e. *Nemandinn hefur (*hana/*bókina) ekki lesið (bókina/hana)*

[Icelandic]
- f. *Studenten har (*den/*bogen) ikke læst (bogen/den)*

[Danish]

The-student has (it/the-book) not read (the-book/it)

‘The student hasn’t read it/the book.’

The various differences between the patterns of OS displayed by the languages in (2) are summarized in the table in (3).

(3)	Pronouns (weak)	Full DPs	Nonfinite main verb
Mainland Scandinavian	Obligatory	No	No (HG)
Icelandic	Obligatory	Optional	No (HG)
German/Dutch (‘scrambling’)	Obligatory	Optional	Yes

For the purposes of the present paper, the key question arising from (3), as stated above, is the following: Why is pronominal OS obligatory wherever it is possible (i.e. HG-environments in the VO languages) in those languages in which it occurs, and not

simply optional like full-DP OS (cf. Holmberg 1986, Vikner 1994)? It is clear from (2a-d) that a weak-pronominal object is barred from remaining in situ just in case the verb moves in a VO language, and barred from doing so outright in an OV language (cf. (2d), where the pronoun must shift despite the nonfinite, in-situ verb). In the unique case of weak pronouns, then, HG actually holds biconditionally in the VO languages – i.e., not only does OS imply V-movement (cf. the ‘traditional’, equidistance approach of Chomsky 1995) but V-movement also implies OS. This additional constraint on the distribution of weak pronouns vis-à-vis full DPs is what we shall seek to formalize and explain in the remainder of this paper.⁵

To this end, let us first briefly review three recent accounts of object shift and pronoun (dis)placement in the minimalist literature. Holmberg (1999) extends the empirical domain of HG so that OS is contingent not only on V-movement but on the evacuation of *any* “phonologically visible” category between the launch and landing sites of the shifted object. OS then becomes a “PF-operation”, applying in a component of the grammar dubbed “Stylistic Syntax” where it is driven by the semantico-prosodic properties of the shifted item, formalized via the feature [\pm Foc(us)].⁶ An element bearing the [–Foc] feature must move out of the focus domain (i.e. VP, cf. Diesing 1992) to a position where it can be governed by a phonologically visible [+Foc] element such as the verb or another argument (“[–Foc] must be governed by [+Foc]”, p.25). Pronouns are obligatorily, inherently specified as [–Foc], whereas Icelandic full DPs are only optionally [–Foc], hence the noted asymmetry between pronominal and full-DP OS. Whether this truly solves the problem in question or merely ‘technicalizes’ and restates it is debatable, however, since what is lacking is an explicit and predictive theory of the different conditions for [\pm Foc]-assignment across different languages.

Chomsky’s (2001) own proposal, a revision of Holmberg’s, seeks to eliminate the semantics-sensitive, Greed-based complications of Holmberg 1999 by maintaining a local, formal syntactic imperative for driving OS, namely an EPP-feature optionally added to the v^* phase head in languages for which this will have an effect on outcome.⁷ These are the [+OS] languages, in which an interpretive complex *Int’* (new, focussed, non-specific semantics) is assigned to the “phonological border” of v^*P , and the ‘new outcome’ that arises from EPP-driven movement to the v^*P edge is the evasion of *Int’* (the edge of v^*P is, by hypothesis, assigned the complementary semantics, *Int*). Since this OS rationale applies to pronouns and full DPs alike, the full-DP/pronoun asymmetry must simply result from the incompatibility of inherently anaphoric elements (i.e. pronouns) with *Int’* semantics – an unshifted pronoun will result in severe deviance.⁸

Essentially, then, Chomsky’s tack is to assign the *Int’* complex not to the element that shifts (as Holmberg does) but rather to a position in the structure. Whilst this succeeds in localizing the problem and removing lookahead to the interface, one might yet question whether a ‘property of positions’ is really a desirable or plausible alternative given the minimalist assumptions of Bare Phrase Structure and Inclusiveness (or “No Tampering” in terms of Chomsky 2005a), according to which no

structure exists independently of the lexical items that project it. Further, since the edge of a phase subsumes the “phonological border” in the relevant cases (i.e. the edge *becomes* the phonological border if something moves to it), there must be some way of distinguishing these notions independently of structure if each is to be assigned contradictory semantics (*Int* to the former, *Int'* to the latter), with *Int* presumably overriding *Int'* just in case border = edge. The phonological-border approach is in any case problematic if we assume the external argument to merge in Spec- v^* , as Chomsky does, since it is then unclear that the internal argument would ever be in the border zone of v^*P at the point in the derivation where OS to Spec- v^* must apply (i.e. prior to raising of the external argument to Spec-T, given strict cyclicity).

Grohmann (2000) provides a different LF-based rationale for the scrambling of weak pronouns in OV Germanic. Weak pronouns are argued to be “LF-clitics” (cf. also Laenzlinger 1998) which raise as XPs out of the VP-domain in the overt syntax and then cliticize to a person- or point-of-view-related functional head at LF. The movement in question (or at least the ultimate step of covert cliticization) is driven by the hypothesized ϕ -deficiency of weak and clitic pronouns; the functional head to which they cliticize then supplies the missing (“deficient”, “underspecified”) features via a checking relation. Like Holmberg (1999), this movement is therefore ‘greedy’, driven by properties of the moved element rather than its host; like Chomsky (2001), it cannot provide us with an account of all of the facts in (2)/(3) – Grohmann’s characterization of weak pronouns is aimed at OV Germanic and would seem unable to allow for HG effects in the VO languages, whereas Chomsky 2001 works well for VO languages but fails to predict the obligatoriness of pronominal scrambling in OV (2d) (see section 5 for more on this point).

Where all three approaches converge, however, is in the central role that they attribute to the presumed semantic, LF-interpretive properties of weak pronouns ([\pm Foc], *Int'*, LF-cliticization to a point-of-view head, etc.). This leaves the one essential, irreducible fact about weak pronouns completely mysterious and incidental – namely, their prosodic deficiency, i.e. the very fact that they are weak at all.⁹ Just why should obligatory OS be a property of prosodically deficient elements only? The various LF-related assumptions and technical devices assumed by these authors are arguably missing this point and surplus to the requirements of a maximally simple account of the facts at hand (though, to be fair, only Grohmann’s is specifically a theory of weak pronouns, and the technology in Holmberg and Chomsky extends to full-DP OS as well as pronominal OS). In order to come closer to the level of ‘principled explanation’ strived for under the Strong Minimalist Thesis (as reformulated in Chomsky 2004, 2005b), I therefore propose that a much simpler, arguably more natural account of the facts in (2)/(3) should be located at the interface with PF, not LF. This will allow us to take seriously the prosodic deficiency of weak pronouns whilst at the same time dispensing with the LF-related paraphernalia of [\pm Foc] features, government relations, Greed-driven movement, extra/covert cycles and even OS/*Int* parameters, none of which seem necessarily imposed by the interfaces or reducible to general principles

of computational efficiency. Instead, we will appeal to just a single theoretical device, the phase, to which we now return.¹⁰

3. Phase integrity

The phase, via its corollary the PIC, imposes a maximum-length restriction on syntactic dependencies (thereby defining certain locality domains in a minimalist syntax). When a phase head is merged, the complement domain of the next lower phase head is sent to Spell-Out, with the result that only the head and specifier ('edge') material of the lower phase head remain accessible to subsequent operations. Given the structure [_{ZP} Z ... [_{HP} α [H YP]]], with Z and H the heads of ('strong') phases, the phase HP is thus spelt out when Z (i.e. the next strong phase head) is merged, at which point the domain of H (i.e. YP) becomes invisible for the remainder of the derivation. Consequently, any operations initiated by head Z can only search as far as the edge of HP. Since phases are identified as C and *v*, if Z = C and H = *v* then VP (= YP) is accessible to probing by T but not by C. That is, C introduces a phase boundary between *v* and VP. (See M. Richards 2004: Chapter Three for a much fuller, critical discussion of phases and the PIC.)

If, as suggested at the outset of this paper, phases are also expected to have visible effects on the PF side of the syntax-PF interface, what kind of evidence should we now be looking for? In other words, what is the PF equivalent of a phase boundary being introduced between *v* and VP? To answer this question, we need to briefly review some theoretical assumptions about the nature of the syntax-PF interface. I will adopt the framework of prosodic phonology as elaborated in the papers in Inkelas & Zec (1990) and elsewhere, outlining two of the main devices employed in this framework, both of which have been extensively motivated in the literature.

3.1 Prosodic phonology: a theory of the syntax-PF interface

In order to make the theory of the syntax-phonology connection as restrictive and testable as possible, it is desirable to limit the amount of access that the rules and operations of the phonological component have to syntactic information. Phonology should no more be able to refer to purely syntactic notions (such as categories, labels, traces, c-command, government, dominance, sisterhood, θ -marking, agreement, etc.) than syntax can to the segmental content of the lexical items it manipulates. We do not expect to find a syntactic operation that moves to the front of the clause all phrases whose head contains a bilabial fricative; similarly, we would also like to minimize, in a principled manner, the extent to which phonological rule domains are defined by the syntax. To this end, prosodic phonology assumes that the syntax-phonology relation is mediated by an intervening level of prosodic representation, the 'prosodic hierarchy'. Phonological rules thus refer only to the constituents of this prosodic structure (the

“indirect reference” hypothesis), a version of which is given in (4).¹¹

(4) *Prosodic hierarchy*

()	<i>Utterance</i>			
()(<i>Intonational Phrase (IntP)</i>			
()	()	<i>Phonological Phrase (φ)</i>		
()	()	()	<i>Phonological Word (ω)</i>

As an independent level of representation, the prosodic structure in (4) is further subject to a number of wellformedness constraints which together ensure a strictly layered and exhaustive parse of the syntactic string. Relevant here is that a prosodic constituent of level C^n must be properly and exhaustively contained in a prosodic constituent of the immediately dominating level C^{n+1} . In other words, a ω cannot straddle a φ -boundary, and a φ -boundary imposes a boundary at all lower levels of the hierarchy (see Selkirk & Shen 1990, Condoravdi 1990, Truckenbrodt 1995: 29–31 for further discussion). Thus, analogously to syntactic structure, a constituent of the hierarchical prosodic structure in (4) cannot be immediately dominated by two distinct mother nodes (as is the middle ω in (5a)):

(5) “No Straddling”

a. *Ill-formed*

()	()	φ
()	()	ω

b. *Well-formed*

()	()	φ
()	()	ω

As argued in Truckenbrodt 1995, the ill-formed (5a) results in an ordering paradox such that the offending ω is temporally contained in two distinct and sequentially ordered phonological phrases. The phonological material in the ω in question would therefore have to both precede and follow itself, violating the irreflexivity requirement on linear order (cf. Nunes 1999).

The upshot of this “no straddling” constraint is that the following two ‘top-down’ effects are implied: (a) if two adjacent feet/syllables are in the same ω , then they must also be in the same φ ; (b) if two adjacent feet/syllables are in different φ ’s, then they must also be in different ω ’s. These will become important in the following.

With the above framework in place, we are now in a position to formulate the expected PF equivalent of introducing a (syntactic) phase boundary between a phase head and its complement domain (i.e. between C and TP, and between v and VP). On a minimal extrapolation of the PIC to the PF-interface, the phase will represent an upper bound on the size of phonological phrases (i.e., that level of the prosodic hierarchy that is defined by syntactic constituency, cf. note 11).¹² In other words, we may assume that, at point of Spell-Out, a φ -boundary is introduced, with the result that two adjacent categories straddling a phase boundary will belong to separate φ ’s (and thus separate ω ’s, by the “no straddling” effect in (5)). This arguably natural assumption that a φ -boundary is introduced at each point of Spell-Out implies the following constraint on syntax-PF mapping, one that preserves the integrity of syntactic phases at the PF-interface:

We now have everything we need to identify and explain the extra constraints that regulate the distribution of weak-pronominal objects in Germanic OS constructions. Before we do so, though, let us first illustrate how (6) might work on the basis of independent evidence from phenomena other than OS.

3.2.1 Neg-contraction resolving biclausal ambiguity

(7) a. *The point is not to scare the public*
 b. [[The point is not] [to scare the public]]
 c. [[The point is] [not to scare the public]]
 d. *The point isn't to scare the public*
 e. <is not> → <isn't> / (_ _)₀

(8) * [The point [T_i is [v_p v_{def} ... V [C_{CP} C [[n't] T ...]]]]]]
 (// ...)_φ
 ↑ φ-boundary forced at merge of matrix v_{def} ¹³

3.2.2 ECM in English versus French

We might also invoke (6) to explain the differences between French and English regarding the availability of ECM constructions (9), as discussed in Kayne 1981.

- (9) a. *John believes Bill to be stupid*
 b. **Jean croit Robert être stupide*
 John believes Robert to-be stupid
 ‘John believes Robert to be stupid.’
 c. *Le garçon que je croyais être stupide*
 The boy that I believed to-be stupid
 ‘The boy that I believed to be stupid.’

Neeleman & Weerman (1999) propose a PF analysis of ECM constructions such that the matrix verb and ECM subject have to appear in the same ϕ (for reasons of the ECP and case-licensing at PF, not relevant here). If we adopt this central insight, the facts in (9) follow straightforwardly from Phase Integrity if the relevant ECM verbs in English but not French are able to select a TP complement (T_{def} in Chomsky’s terms).

In (10a), the string-adjacent *believes* and *Bill* are straightforwardly parsed into the same ϕ , and thus the ECM relation is established. In (10b), a phase boundary intervenes between the adjacent verb and ECM subject: when matrix v is merged, the complement domain of embedded C, containing the ECM subject in embedded Spec-T, is spelt out (by the PIC) and thus cannot be parsed inside the same ϕ as the matrix verb. However, if the ECM subject moves to the matrix CP, as arguably occurs when the ECM subject is relativized (10c), then the copy left by successive cyclic EPP-driven movement via Spec- v will still be accessible to the matrix verb (in T) after the respective domains of embedded C and matrix v are spelt out, allowing the verb and ECM subject (copy) to be parsed together as ϕ -mates by (6).

- (10) a. *English* (no V-to-T; ECM verb selects T_{def} complement)
 John believes Bill to be stupid
 $[_{vp} \dots v \dots V [_{TP} [\text{Subj}] T_{\text{def}} \dots]]]$
 () $_{\phi}$
 b. *French* (V-to-T; verb selects CP complement only)
 *Jean croit Robert être stupide
 $[\dots T [_{vp} \dots v \dots V [_{CP} C [[\text{Subj}] T \dots]]]]$
 (//) $_{\phi}$
 \uparrow ϕ -boundary forced at merge of matrix v
 c. *Le garçon que je croyais t_i t_i être stupide*
 $[\text{Subj}]_i \dots [T [_{vp} [t_i] v \dots V [_{CP} [t_i] C [[t_i] T \dots]]]]$
 () $_{\phi}$

3.2.3 Null complementizer distribution

In their discussion and analysis of complementizer deletion in English, Bošković & Lasnik (2003), following Pesetsky (1992), propose that the null complementizer is a PF-affix requiring an adjacent host. However, to account for the data in (11), Bošković & Lasnik have to make additional stipulations, such that the host must specifically be a [+V] category, with a further special exception for copulas.

- (11) a. *It seemed at that time [_{CP} Ø [_{TP} David had left]]
 b. *What the students believe is [_{CP} Ø [_{TP} they will pass the exam]]
 c. *Mary believed Peter finished school and Bill [_{CP} Ø [_{TP} Peter got a job]]
 (Bošković & Lasnik 2003: 529 (3a,b,d))

Sensitivity to syntactic categories would be unfortunate for a phonological rule like affixation (cf. the Indirect Reference hypothesis of section 3.1). These extra stipulations are, in fact, unnecessary given the Phase Integrity condition in (6). Since PF-affixation involves restructuring at the level of the phonological word (ω), as schematized in (12), and since V (host) and C (null affix) must be in the same ϕ in order to form a single ω (cf. the wellformedness theorem in (5)), such PF-affixation should be subject to (6).

- (12) $\langle V C \rangle \rightarrow \langle [V-C] \rangle / (_ _)_{\omega}$

It follows from the Phase Integrity approach that adjacency alone will be insufficient for affixation (and other adjacency-dependent PF operations) just in case a phase boundary intervenes between the string-adjacent items. In the present case, an intervening phase boundary blocks affixation between null C (which we can take to be an enclitic element) and left-adjacent host (irrespective of its syntactic category). We can therefore explain the ungrammaticality of (11a-c) without the need for syntactic subcategorization at PF or stipulations about copulas. Copula *be* fails as host in (11b) since it occupies the matrix T position. The PIC inserts a ϕ -boundary between matrix phase-head ν and its complement VP, thus separating matrix T from the null C head (the same applies for *Bill* in matrix Spec-T and the null C head in (11c)). (11a) is then ruled out if adjuncts are separate phases/spell-out domains (cf. Uriagereka 1999, Chomsky 2004).¹⁴

4. Weak pronouns as PF-clitics

We can now return to the main empirical concern of this paper – an explanation of the pronominal OS paradigm in (2), repeated here for convenience.

(2) Core data

- a. *Der Student las (es/das Buch) nicht (das Buch/*es)* [German]
 b. *Nemandinn las (hana/bókina) ekki (bókina/*hana)* [Icelandic]
 c. *Studenten læste (den/*bogen) ikke (bogen/*den)* [Danish]
 The-student read (it/the-book) not (the-book/it)
 ‘The student didn’t read it/the book.’
 d. *Der Student hat (es/das Buch) nicht (das Buch/*es) gelesen* [German]
 e. *Nemandinn hefur (*hana/*bókina) ekki lesið (bókina/hana)* [Icelandic]
 f. *Studenten har (*den/*bogen) ikke læst (bogen/den)* [Danish]
 The-student has (it/the-book) not read (the-book/it)
 ‘The student hasn’t read it/the book.’

At first blush, it would seem that phase theory is unlikely to offer a characterization of the extra conditions that regulate and obligatorize the placement of weak pronouns. Take the rough generalization in (13), based on Svenonius 2001a.

- (13) A weak pronoun is spelt out *in the same phase* as the lexical verb.

Although this captures the basic patterns for the VO/Scandinavian languages, it fails to cover the OV facts if we maintain Chomsky’s C/v definition of phases – the shifted object in (2d), which we take to occupy Spec- v , is in a different phase from the in-situ lexical verb for spell-out purposes (since the PIC imposes a phase boundary between v and its complement, VP). However, (13) will serve us well as a first approximation since, once we derive *why* this generalization holds at all (i.e. even for the VO languages), the OV languages fall immediately into line.

Recall the salient characteristic of weak pronouns, that which distinguishes them from strong pronouns, namely their prosodic deficiency. This is the core, defining property that any theory of weak-pronoun placement should take into account (and, ideally, it is the *only* property that an explanatory account should have to appeal to). Let us formalize this prosodic deficiency as in (14).

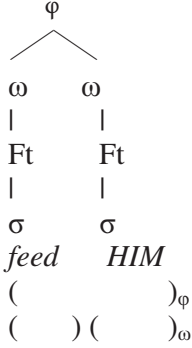
- (14) A weak pronoun is not an autonomous prosodic word (ω).¹⁵

In order to be interpretable at PF and thus not incur a violation of Full Interpretation (FI), weak pronouns therefore require hosting by a preceding word at PF (cf. Erteschik-Shir & Strahov 2004 for a similar characterization of weak pronouns). That is, they are enclitic PF-affixes (like the null complementizers of section 3.2.3) that move as independent XPs in the syntax and cliticize to the left-adjacent category only at PF (i.e. *post-movement*, contra Erteschik-Shir & Strahov).¹⁶

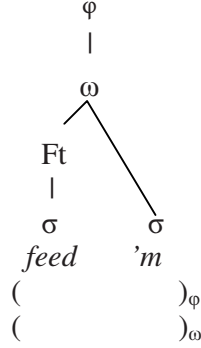
Thus, a strong pronoun may be attributed the prosodic structure in (15a) – it is an autonomous, stress-bearing unit, capable of independent realization – whilst a weak pronoun is necessarily realigned as part of the prosodic structure of its host ω (15b)

since the only way to prosodically license such an unfooted syllable is to parse it inside another ω .¹⁷

(15) a. Strong form



b. Weak form



The weak pronoun (PF-clitic) and its host are, by definition, part of the same ω . As such, they instantiate exactly the same word-level reanalysis scheme as that given above for *n't*-contraction in (7e) and for null-complementizer affixation in (12). We therefore predict that the distribution of weak pronouns should likewise be subject to the restrictions imposed by Phase Integrity (6) – for affixation to obtain, the weak pronoun and its left-adjacent host must be parsed inside the same φ and so must minimally belong to the same syntactic phase. Any intervening PIC-induced phase boundary will block hosting and so render the weak pronoun uninterpretable at PF; in such cases, FI dictates that the strong form of the pronoun be realized (as this is then the only way to yield a wellformed PF).¹⁸ The preliminary generalization in (13) can now be restated in the form of the constraint in (16), which derives immediately from (6).

(16) Weak pronouns as 'phasal' affixes

A phase boundary cannot intervene between a weak pronoun and its host.

In practice, (16) prevents a weak pronoun from appearing at the left edge of a phonological phrase (and thus of a phasal domain) – these pronouns may in that sense be informally characterized as phasal affixes. The facts in (2), including the problematic asymmetry between full DPs and weak pronouns with regard to obligatoriness of shifting, now follow without further ado.

Firstly, the availability of postverbal weak pronouns in the nonfinite (i.e. unshifted, non-HG) environment in (2e–f) is trivial since no phase boundary intervenes between the in-situ verb and its complement, allowing the indicated prosodization to take place. The more interesting cases, then, are those where pronominal OS is obligatory, i.e. (2a–d). By (16), we predict (correctly) that these obligatory environments should be exactly those where the PIC would separate the *unshifted* pronoun from its left-adjacent host and so result in their being parsed into separate φ 's (by Phase Integrity,

(6)), bleeding hosting and the realization of the weak form of the pronoun. Let us take an unshifted and a shifted example from both a VO and an OV language to show how this is borne out, starting with VO (Icelandic).

(17) *Icelandic* (VO) (= (2b))¹⁹

a. Unshifted pronoun

*[_{CP} [*Nemandinn*] [_{C'} [*las*] ... [_{νP} *ekki* [_{VP} *t_V* *hana*]]]]
 () () ()_φ

b. Shifted pronoun

[_{CP} [*Nemandinn*] [_{C'} [*las*] ... [_{νP} *hana* [_{νP} *ekki* [_{VP} *t_V* *t_{Obj}*]]]]]
 () ()_φ

Upon merger of matrix C, the complement domain of *ν* (i.e. VP) is spelt out by the PIC, forcing a ϕ -boundary to be inserted at the left edge of VP. That is, the PIC imposes a phase boundary, and therefore also a ϕ -boundary, between *ν* and VP. It follows that the unshifted pronoun in a head-initial (VO) language like Icelandic will fail to find a legitimate, left-adjacent, phase-mate (and thus ϕ -mate) host wherever the verb leaves VP (cf. (17a)). OS is therefore obligatory here if the pronoun is to be spelt out as weak.²⁰ By undergoing EPP-driven OS into the *νP*-edge, the pronoun in (17b) is able to be ph(r)ased with the left-adjacent word, allowing the weak form to be realized via encliticization. The extra constraint on the placement of weak pronouns, namely the bidirectionality of HG in the case of pronominal OS (as opposed to full-DP OS) identified in section 2, has therefore been reduced to (16) – a weak pronoun cannot be stranded at the left edge of a phasal domain.

Turning next to OV Germanic, we see that the exact same factors are at work, as shown for German in (18).²¹

(18) *German* (OV) (= (2d))

a. Unshifted pronoun

*[_{CP} [*Der Student*] [_{C'} [*hat*] ... [_{νP} *nicht* [_{VP} *es* *gelesen*]]]]
 (...) ()_φ

b. Shifted pronoun

[_{CP} [*Der Student*] [_{C'} [*hat*] ... [_{νP} *es* [_{νP} *nicht* [_{VP} *t_{Obj}* *gelesen*]]]]]
 (...) ()_φ

Again, merger of matrix C imposes a phase/ ϕ -boundary between *ν* and VP. The unshifted object inside the head-final VP in (18a) is therefore stranded without a legitimate, left-adjacent, phase-mate (ϕ -mate) host by the PIC, irrespective of whether the verb moves or not. Hence pronominal OS is obligatory in an OV language even where the lexical verb is nonfinite and thus remains inside VP (yielding (18b)). We thus derive the well-known *lack* of HG effects in OV languages (cf. (3), and (2d) versus (2e-f)).^{22, 23}

5. Concluding remarks

We set out to identify and explain the minimal extra conditions on weak pronoun placement in Germanic that are responsible for the lack of flexibility and optionality that obtains with these elements in OS environments by contrast with full DPs (i.e. the bidirectional HG effect in VO Scandinavian, and the generalized, anti-HG obligatoriness in OV West Germanic). The account proposed in sections 3 and 4 offers a principled explanation of the patterns in (2) by proceeding from the one inalienable property of weak pronouns, their prosodic deficiency, and locating the distributional consequences of this property entirely within the PF component where they most naturally belong. This property, in turn, allows us to make do with the barest of assumptions and eliminate all but the most necessary stipulations. The prosodic realignment of weak pronouns with their hosts, a requirement ultimately imposed by FI, is shown to be sensitive to syntactic phase boundaries, providing direct evidence for the reality of Chomsky's phases at the PF interface in the form of a maximal size restriction on prosodic constituents ((1)/(6)).²⁴ This restriction, which is the minimal extension of the PIC to PF and prosodic constituency that can be expected if phases constitute the units of Spell-Out, finds further empirical support in various domains outside of weak-pronoun distribution in Germanic (section 3.2).

The analysis has a number of further implications and conceptual advantages over previous minimalist accounts of the distribution of weak-pronominal objects. Firstly, it cuts across the VO/OV divide without having to make special provisions for either word-order type. In particular, it can explain the obligatoriness of weak-pronominal OS in OV languages (cf. (2d)) without the need to stipulate that such languages are always [+OS], as Chomsky's (2001) account would be forced to do; that is, the *Derivation by Phase* approach would require the stipulation that the "phonological border" of ν P in OV languages is obligatorily assigned the *Int'* semantic complex (unlike VO languages, which are free to vary in this [+/-OS] property, raising the awkward question of why there should be no [-OS] OV languages). Indeed, the need for a separate OS/HG parameter is eliminated in the present proposal, since it makes the simple prediction that a weak pronoun cannot be the leftmost element inside VP (rather than ν P); the effects of word-order type fall out immediately, and OS and Scrambling can therefore be treated as two sides of the same VO/OV coin.²⁵

Secondly, we have no recourse to special allowances for ν P-adjuncts (e.g. negation in (2) and the other adverbial elements taken as diagnostics for OS in the literature, cf. Collins & Thráinsson 1996), a concession that is common to many OS analyses – cf. the inability of adverbials to govern [-Foc] in Holmberg 1999, their apparent invisibility for the purposes of determining the phonological border in Chomsky 2001, and their unavailability as hosts for "prosodic incorporation" in Erteschik-Shir & Strahov 2004. On the present account, adverbial hosts are barred in the same way as any other illegitimate adjacent host-candidate, *viz.* by the PIC, which implies that adjacency is merely necessary, not sufficient, for affixation to obtain.

Finally, as mentioned above, the present analysis exploits the prosodic deficiency of weak pronouns rather than any inherent semantic properties (real or otherwise). The ‘structural deficiency’ of weak pronouns (cf. Cardinaletti & Starke 1996, Grohmann 2000) resides solely in their prosodic rather than syntactic structure, as is desirable since the apparent lack of any logical connection between syntactic deficiency and prosodic weakness should ideally render the former notion redundant in an explanation of the basic distributional patterns. We thus avoid the postulation of [\pm Foc] features, weak/strong ϕ -features, and the associated complexities of Greed-driven movement. Further, the present analysis refers only to phases and the PIC; it thus dispenses with the extra notion of phonological border and the associated stipulations and complexities regarding the positional assignment of interpretive complexes. Counterintuitive measures such as ‘LF-cliticization’ to empty heads are replaced by transparent PF-cliticization driven by indispensable prosodic requirements. Since this cliticization at PF is fed by OS in the syntax, the latter operation conforms to the requirement that an optional operation have an effect on outcome (Chomsky 2001: 34 (60)). As we have seen, the obligatory *absence* of pronominal OS in (2e,f) follows since cliticization is available in situ, and so the optional EPP-feature would therefore not be motivated in this case. Since pronouns always inherently encode old information (unlike nonpronominal DPs), irrespective of whether they are strong or weak, it is not clear that ‘new outcomes’ could ever be motivated via the LF-interface. That is, if it is semantic rather than prosodic properties that motivate pronominal OS (via the licensing of an optional EPP-feature in the syntax), the only effect on outcome is the avoidance of a deviant interpretation (a clash of semantic complexes) rather than the creation of a new one (cf. also note 8). If we are to maintain a local implementation of optional, ‘surface-semantic’ operations without the need for direct PF-LF interaction and global contamination of the syntax, then the only interface at which weak-pronominal OS can be motivated is PF. This, in turn, allows a maximally simple theory to emerge that eliminates the redundant technology of LF-based approaches.

In sum, weak pronouns appear precisely where Chomsky’s multiple spell-out model would predict such prosodically deficient elements to appear. It is hoped that the theoretical and conceptual parsimony of this approach comes closer than previous accounts to the minimalist goal of explaining syntactic phenomena purely in terms of ‘natural’ interface conditions.

Notes

* Thank you to the audiences at the Minimalist Theorizing workshop, Bloomington (University of Indiana), June 2004, and the interfaces workshop of the Mediterranean Syntax Meeting, Rhodes (University of the Aegean), June 2005, for their many insightful comments and suggestions on the material presented in this paper. This research was supported by a postgraduate award from the Arts and Humanities Research Board (UK).

1. See, amongst others, Uriagereka 1999, Nissenbaum 2000, Svenonius 2000, 2001a/b, Chomsky 2001, Bošković 2002, Abels 2003, Adger 2003a, Felser 2003, Legate 2003, Sauerland 2003, Müller 2004, Wurmbrand & Bobaljik 2003, Ishii 2004. See also Boeckx & Grohmann 2004 on the parallels between phases and GB barriers and for a critique of the whole approach.
2. The work of Fox & Pesetsky (2003 et seq.) could be interpreted as evidence for phases at the PF interface in so far as their linearization statements are regulated in a post-syntactic component. Also, Adger 2003b, Legate 2003 and Kahnemuyipour 2004 offer phase-based analyses of stress assignment. For the LF interface, see Bonthuis 2004 for arguments that phases are implied by the logical form of semantic representations.
3. OS therefore fails to obtain in embedded clauses in Mainland Scandinavian, since these languages, unlike Icelandic, are verb-second (V2) for main clauses only. Examples of embedded clauses have thus been omitted from (2) for the purposes of the exposition, since their behaviour (and analysis) is essentially identical to that with nonfinite verbs in compound tenses, as in (2f). However, see Zwart 1994 for an opposing view, in which the nonfinite verb in Icelandic (2e) does not remain in situ but also raises out of VP.
4. The optionality is “apparent” since OS becomes obligatory under a given reading of the DP in question; thus (2a) is degraded with *das Buch* unshifted. However, under the assumption that the syntax is blind to the semantics of the atoms and constituents it manipulates (i.e. no lookahead, no pseudosemantic Topic/Focus features on lexical items, etc.; cf. Chomsky 2001), this does not (and cannot) entail that OS is obligatory with a definite DP; rather, it must be that a shifted DP is (obligatorily interpreted as) definite. See Biberauer & Richards (this volume) for further relevant discussion of this point.
5. Note, therefore, that what I am proposing here is not a theory of OS per se, let alone a complete theory of OS that encompasses full DPs too (I offer such a theory in M. Richards 2004). Rather, I am attempting to identify the minimal conditions on the placement and realization of weak pronouns in a minimalist system, those that exist independently of and in addition to whatever principles and devices must be invoked in any given theory of OS (full-DP or otherwise). The advantages of my proposal over previous accounts are therefore conceptual rather than empirical.
6. Erteschik-Shir & Strahov (2004) propose a similar architecture in their approach to scrambling and OS phenomena, with a post-narrow-syntax level of “P-syntax” in which operations are driven by Topic and Focus features, albeit with a general rule of “prosodic incorporation” (PI) instead of a special OS operation. Since PI accounts for both pronominal and full-DP OS alike, they have to assume that full DPs can undergo PI (essentially, cliticization) to their host. Whilst shifted DPs are certainly destressed at the level of the phonological phrase or some such higher-level prosodic constituent (cf. section 3.1 below), they still bear word-level stress and would therefore seem unlikely candidates for (word-level) cliticization, especially where the host is itself another full DP (as will obtain in the case of full-DP OS in a non-subject-initial V2 clause in Icelandic). Since I do not subscribe to the view that discourse-significant, ‘surface semantic’ operations like OS cannot be (narrow-)syntactic (on the contrary, I assume that they *must* be; cf. Chomsky 2001: 15 (13)), I instead pursue the aim here of naturalizing OS into the standard derivational architecture of the Minimalist Program, with OS an EPP-driven syntactic movement operation like any other.
7. Chomsky 2001: 34 proposes an economy principle to the effect that the assignment of

optional EPP-features to phase heads must “yield a new outcome” (cf. Reinhart 1995). Failure to yield such an outcome results in an unmotivated feature in violation of Full Interpretation.

8. Note that convergence *per se*, then, is not at stake for Chomsky, which seems correct for the genuinely optional cases, i.e. full-DP OS (cf. note 4), but much less so in the case of unshifted weak pronouns, which no amount of pragmatic context-tweaking can rescue. Rather, an unshifted weak pronoun is *impossible* (ungrammatical) and must be realized as strong (stressed at PF, animate at LF, etc.). Since strong pronouns are as inherently anaphoric/old (i.e. *Int'*-incompatible) as weak ones, LF would seem to be the wrong interface at which to situate this restriction on weak pronouns, hence a PF approach is to be preferred (cf. below).

9. As defined by Cardinaletti & Starke (1996), weak pronouns are unable to be stressed, conjoined or modified. See also Laenzlinger (1998) and Grohmann (2000) for further discussion of the three-way (strong/weak/clitic) typology of pronouns in Romance and Germanic.

10. To be sure, the proposal in sections 3 and 4 is by no means the first attempt at a purely PF-based approach to OS or weak-pronoun placement. Bobaljik's (2002) morphophonological analysis, for example, places both the motivations for and the restrictions on overtly shifted objects entirely within the PF-component (in the form of adjacency conditions on PF-/morphological merger), thus avoiding the lookahead problems of using the semantics or the phonology to make decisions in the syntax. Tellingly for our present concerns, however, Bobaljik's otherwise entirely PF-internal account of OS and HG still has to invoke LF considerations precisely to explain the obligatoriness of (pronominal) OS – pronunciation of the lower copy in an OS chain would result in a (globally-regulated) mismatch between the copies respectively privileged by PF and LF (since it is the higher, VP-external copy that is interpreted at LF, again in the manner of Diesing (1992)). Indeed, Bobaljik does not distinguish between shifted pronouns and full DPs in this respect and so is unable to account for the extra restrictions on weak-pronoun placement identified above. The account proposed in sections 3–4 combines the twin virtues of (a) a purely LF-free analysis, and (b) a syntactically localized account, by essentially transposing Chomsky's (2001) analysis from LF to PF (the ‘effect on outcome’, in his terms, becomes a PF one; cf. note 18).

11. See *inter alios* Hayes 1990, Selkirk & Shen 1990, Zec & Inkelas 1990, Inkelas & Zec 1995, Selkirk 1995, Truckenbrodt 1995 for detailed discussion. Some authors propose additional levels in the hierarchy (such as Major and Minor Phrases, Clitic Groups, etc.); these are not necessary for our purposes here. The hierarchy also continues below the level of the phonological word (foot, syllable, ...) and thus into the domain of prosodic morphology (cf. McCarthy & Prince 1995). In addition, prosodic phonology requires an algorithm to map syntactic onto prosodic constituency, such as Selkirk's ‘end-based’ alignment rules, which map syntactic phrases (XPs) to φ -phrases via their (left or right) edges.

12. Note, then, that there is no implication (given (5)) that phases should impose boundaries at higher levels of the hierarchy, such as at the Intonational Phrase and Utterance levels. Clearly, there are phonological rules that apply to the entire, reconstituted string, such as the determination of intonational contours; but this does not mean that syntactic phases cannot have an effect on lower-level prosodic categories and thus feed or bleed those phonological rules that refer to the latter.

13. See Legate 2003 and M. Richards 2004 for arguments that defective, nontransitive *v* is a (strong) phase.

14. Bošković & Lasnik, too, invoke an intervening prosodic boundary to explain the unavailability of complementizer drop with right-node-raised clauses (cf. **They suspected and we believed* [_{CP} Ø [_{TP} *Peter would visit the hospital*]], their (3c)). They argue that RNR'd complements are to be parsed as separate intonational phrases (i.e. IntP in (4)), hence affixation is blocked between the null affix and its adjacent host. Since an IntP boundary implies a φ boundary (by (5)), this is of course perfectly compatible with the present proposal. An (2004) generalizes the IntP approach to claim that all the cases of illicit complementizer drop involve clausal complements in “noncanonical” positions and that such noncanonically-placed clauses are obligatorily parsed as separate IntPs. However, he rejects a null-affix analysis and instead seeks to derive complementizer drop from a general ban on empty IntP edges. This ban is then claimed to be the PF counterpart of the PIC, though they would appear to be conceptually and logically unrelated, to my mind at least. In the proposal I am putting forward here, the PF counterpart of the PIC is simply the PIC – same units, same effect (i.e. isomorphic phase boundaries at syntax and PF, yielding equivalent inaccessibility to syntactic and phonological operations alike).

15. That is, it is smaller than a foot, hence its inability to bear stress. A stressed syllable is the head of a foot (the minimal stress-bearing unit), and every foot must be dominated by (i.e. contained in) a ω for prosodic wellformedness (cf. section 3.1). Thus no ω can be smaller than a foot.

16. Thus in interrogative and adverb-initial V2 clauses, for example, the weak pronoun in the vP -edge is hosted by the left-adjacent subject DP rather than the verb – there is never any ‘choice’ of host, then, and no category-sensitivity is required. Note also that, since they are enclitic, weak object pronouns cannot appear in clause-initial position – as Grohmann (2000) shows, only strong pronouns may appear in the pre-V2 position in Germanic. Weak *subject* pronouns, on the other hand, are not restricted in this way and are, of course, legitimate in initial position. Since the enclitic property of weak object pronouns has to be stated as a primitive of the theory, the obvious (but uninteresting) solution is simply to treat weak subject pronouns as *proclitics*. I leave the issue open.

17. The structures in (15) are based on Selkirk 1995. (15b) is Selkirk’s “internal clitic”.

18. Hence, wherever OS can in principle apply (i.e. HG environments in VO languages and universally in OV languages), unshifted pronouns are obligatorily strong, and, conversely, strong pronouns only optionally undergo OS – it follows that the strong form is the default, ‘unmarked’ form in OS environments. The weak form is the *result* of OS in the syntax (and not the teleological motivation for it, thus lookahead plays no part); it is this otherwise unavailable ‘effect on outcome’ at the PF-interface, i.e. the realization of the weak form, that licenses the optional EPP-feature on v , in the manner of Reinhart 1995, Chomsky 2001, etc.

19. And identically for Danish (2c). Main-clause V2 German (2a) shares this analysis too, albeit with the base positions of V and O in (17a-b) switched around for OV order.

20. In the VO case (17a), the pronoun is forced to form a φ on its own. As a weak pronoun is an illegitimate autonomous ω (cf. (14) and note 15), it violates *a fortiori* the minimal size requirements for all higher-level constituents on the prosodic hierarchy. Only the strong form of *hana* can be parsed in isolation and thus allow a convergent PF-object to be obtained. (In the case of German (18a), below, no such convergent alternative is possible since *es* is an inherently weak form that lacks a strong allomorph, perhaps by virtue of its inherent inanimacy – cf. Cardinaletti & Starke 1996.)

21. To be sure, there are some subtle language-specific differences dividing the OV and VO languages. Whilst the EPP-shifted weak-pronominal object must always appear in the leftmost specifier of *vP* with respect to *vP*-adjoined adverbials (cf. Vikner 1994, Grohmann 2000), a fact which follows if adverbials are separate phases (see end of section 3.2.3) and thus illegitimate hosts by (6), there is crosslinguistic variation as to whether a shifted direct object (DO) pronoun must also appear to the left of a (shifted) indirect object (IO). In German, the IO does indeed count for the 'leftmost' requirement of shifted pronominal DOs (cf. (i)), whereas in Swedish and Norwegian, IO-DO order must be preserved post-movement (at least where IO is a full DP; cf. Anagnostopoulou 2004), as in (ii).

- (i) *Der Student hat (es) dem Mann (*es) nicht gegeben*
 The student has (it) the man (it) not given
- (ii) *Jag gav (*den) Elsa (den) inte*
 I gave (it) Elsa (it) not

Given a 'tucking-in' approach to IO-DO order preservation (N. Richards 1999, Anagnostopoulou 2004), a syntactic account of the stricter German placement seems unlikely (rather, a local ϕ -internal PF inversion or alignment rule might be at work, cf. Anderson 2000 on Slavic clitics), but I will not pursue the matter here.

22. On an antisymmetrical approach (Kayne 1994), the pronominal object in OV German would have to have raised to a specifier above VP in (18a) and (18b) alike, and should therefore be able to parse with its left-adjacent host by (6) in either case (i.e. whether or not OS applies). The analysis presented here thus provides evidence that direct objects in OV languages are no different from those in VO languages – that is, they display VP-internal behaviour in VO and OV language-types alike, suggesting that the syntax is essentially symmetrical.

23. Ian Roberts (p.c.) points out that this analysis raises the question of how the weak-pronominal object is hosted in a nonfinite embedded OV clause, as in *Er versuchte, es zu lesen* ['he tried to read it']. For now I will simply assume (as I am forced to do) that the complement clause of restructuring verbs must be smaller than a CP phase; the discussion and analysis of restructuring infinitives in Wurmbrand 2001, Wurmbrand & Bobaljik 2003 lend some support to this claim (i.e. the 'non-restructured' infinitival phrase may simply be a *vP*, with *es* in its edge and thus matrix-accessible).

24. Moreover, the analysis supports the extensional definition of phase heads as C and *v* and so, to that extent, provides evidence against the richer phase systems of Svenonius 2001a/b, Epstein & Seely 2002, Müller 2004, and others. However, it casts doubt on Chomsky's use of 'phonological isolability' as a diagnostic for phasehood – it is the complement of a phase head (i.e. VP), rather than the phrase projected by the phase itself (i.e. *vP*), that is spelt out by the PIC; likewise, it is the former rather than the latter category that is isolated at PF (in the form of a ϕ -boundary blocking cliticization out of the spelt-out unit). The units of cyclic spell-out are thus uniform on both sides of the syntax-PF interface. (Bošković 2002 gives further arguments against invoking PF-isolability in the C/*v* definition of phases.)

25. That is, the analysis paves the way for all three properties – HG, \pm OS, and VO/OV – to be subsumed under a single linearization parameter (akin to the GB head-parameter); see M. Richards 2004.

References

- Abels, K. 2003. Successive Cyclicity, Anti-locality, and Adposition Stranding. PhD dissertation, University of Connecticut.
- Adger, D. 2003a. *Core Syntax: A minimalist approach*. Oxford: OUP.
- Adger, D. 2003b. Stress and phasal syntax. Paper presented at GLOW 2003 (Lund).
- An, D. 2004. Clauses in noncanonical positions in PF. Ms., University of Connecticut.
- Anagnostopoulou, E. 2004. Holmberg's generalization and locality. Handout for GLOW 2004, Thessaloniki.
- Anderson, S. 2000. Towards an optimal account of second-position phenomena. In *Optimality Theory. Phonology, syntax, and acquisition*, J. Dekkers, F. van der Leeuw and J. van de Weijer (eds), 302–33. Oxford: OUP.
- Bobaljik, J. 2002. A-chains at the PF-interface: Copies and 'covert' movement. *Natural Language and Linguistic Theory* 20: 197–267.
- Boeckx, C. and K. Grohmann. 2004. Barriers and phases: Forward to the past? Paper presented at TiLT 2004, Budapest.
- Bonhuis, F. 2004. Phases – a syntactic notion from a logical point of view. Paper presented at LAGB 2004, Roehampton.
- Bošković, Ž. 2002. Expletives don't move! *Proceedings of NELS* 32: 21–40.
- Bošković, Ž. and H. Lasnik. 2003. On the distribution of null complementizers. *Linguistic Inquiry* 34: 527–546.
- Cardinaletti, A. and M. Starke. 1996. Deficient pronouns: A view from Germanic. A study in the unified description of Germanic and Romance. In *Studies in Comparative Germanic Syntax*, Vol. II, H. Thráinsson, S.D. Epstein and S. Peter (eds), 21–65. Dordrecht: Kluwer.
- Chomsky, N. 1995 *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2004. Beyond explanatory adequacy. In *Structures and Beyond. The cartography of syntactic structures*, Vol. 3, A. Belletti (ed.). Oxford: OUP.
- Chomsky, N. 2005a. On phases. Ms., MIT.
- Chomsky, N. 2005b. Three factors in language design. *Linguistic Inquiry* 36: 1–22.
- Collins, C. and H. Thráinsson. 1996. VP-internal structure and object shift in Icelandic. *Linguistic Inquiry* 27: 391–444.
- Condoravdi, C. 1990. Sandhi rules of Greek and prosodic theory. In *The Phonology-Syntax Connection*, S. Inkelas and D. Zec (eds), 63–84. Chicago IL: University of Chicago Press.
- Diesing, M. 1992. *Indefinites*. Cambridge MA: The MIT Press.
- Epstein, S. and T. Seely. 2002. Rule applications as cycles in a level-free syntax. In *Derivation and Explanation in the Minimalist Program*, S.D. Epstein and T. Seely (eds), 65–89. Oxford: Blackwell.
- Erteschik-Shir, N. and N. Strahov. 2004. Focus structure architecture and P-syntax. *Lingua* 114: 301–323.
- Felser, C. 2003. Wh-copying, phases, and successive cyclicity. *Lingua* 114: 543–74.
- Fox, D. and D. Pesetsky. 2003. Cyclic linearization and the typology of movement. Paper presented at GLOW 2003, Lund.

- Grohmann, K. 2000. Towards a syntactic understanding of prosodically reduced pronouns. *Theoretical Linguistics* 26: 175–210.
- Hayes, B. 1990. Precompiled phrasal phonology. In *The Phonology-Syntax Connection*, S. Inkelas and D. Zec (eds), 84–108. Chicago IL: University of Chicago Press.
- Holmberg, A. 1986. Word order and syntactic features in the Scandinavian languages and English. PhD dissertation, University of Stockholm.
- Holmberg, A. 1999. Remarks on Holmberg's generalization. *Studia Linguistica* 53: 1–39.
- Inkelas, S. and D. Zec (eds). 1990. *The Phonology-Syntax Connection*. Chicago IL: University of Chicago Press.
- Inkelas, S. and D. Zec. 1995. Syntax-phonology Interface. In *The Handbook of Phonological Theory*, J. Goldsmith (ed.), 535–549. Oxford: Blackwell.
- Ishii, T. 2004. The phase impenetrability condition, the vacuous movement hypothesis, and *that-t* effects. *Lingua* 114: 1–32.
- Johnson, K. 1991. Object positions. *Natural Language and Linguistic Theory* 9: 577–636.
- Kahnemuyipour, A. 2004. The Syntax of Sentential Stress. PhD dissertation, University of Toronto.
- Kayne, R. 1981. On certain differences between French and English. *Linguistic Inquiry* 12: 349–371.
- Kayne, R. 1994. *The Antisymmetry of Syntax*. Cambridge MA: The MIT Press.
- Laenzlinger, C. 1998. *Comparative Studies in Word Order Variation: Adverbs, pronouns and clause structure in Romance and Germanic*. Amsterdam: John Benjamins.
- Lasnik, H. 1999. *Minimalist Analysis*. Oxford: Blackwell.
- Legate, J. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34: 506–516.
- McCarthy, J. and A. Prince. 1995. Prosodic morphology. In *The Handbook of Phonological Theory*, J. Goldsmith (ed.), 318–366. Oxford: Blackwell.
- Müller, G. 2004. Phrase impenetrability and *wh*-intervention. In *Minimality Effects in Syntax*, A. Stepanov, G. Fanselow and R. Vogel (eds). Berlin: Mouton de Gruyter.
- Neeleman, A. and F. Weerman. 1999. *Flexible Syntax: A theory of case and arguments*. Dordrecht: Kluwer.
- Nissenbaum, J. 2000. Investigations of Covert Phrasal Movement. PhD dissertation, MIT.
- Nunes, J. 1999. Linearization of chains and phonetic realization of chain links. In *Working Minimalism*, S.D. Epstein and N. Hornstein (eds), 217–249. Cambridge MA: The MIT Press.
- Pesetsky, D. 1992. Zero syntax. Vol. 2. Ms., MIT.
- Reinhart, T. 1995. Interface strategies. *OTS Working Papers in Linguistics*. Utrecht.
- Richards, M. 2004. Object Shift and Scrambling in North and West Germanic: A case study in symmetrical syntax. PhD dissertation, University of Cambridge.
- Richards, N. 1999. Featural cyclicity and the ordering of multiple specifiers. In *Working Minimalism*, S.D. Epstein and N. Hornstein (eds), 127–158. Cambridge MA: The MIT Press.
- Sauerland, U. 2003. Intermediate adjunction with A-movement. *Linguistic Inquiry* 34: 308–314.
- Selkirk, E. 1995. The prosodic structure of function words. In *Papers in Optimality Theory*, J. Beckman, L. Dickey and S. Urbanczyk (eds), 439–469. Amherst MA: GLSA.
- Selkirk, E. and T. Shen. 1990. Prosodic domains in Shanghai Chinese. In *The Phonology-Syntax Connection*, S. Inkelas and D. Zec (eds), 313–337. Chicago IL: University of Chicago Press.

- Simpson, A. and Z. Wu. 2002. Understanding cyclic spell-out. *Proceedings of NELS* 32.
- Svenonius, P. 2000. Locality, phases, and the cycle. Ms., University of Tromsø.
- Svenonius, P. 2001a. On object shift, scrambling, and the PIC. *MIT Working Papers in Linguistics* 39. Cambridge MA: MIT.
- Svenonius, P. 2001b. Impersonal passives: A phase-based analysis. In *Proceedings of the 18th Scandinavian Conference of Linguistics*. Lund: Travaux de l'Institut de Linguistique de Lund.
- Thráinsson, H. 2001. Object shift and scrambling. In *The Handbook of Contemporary Syntactic Theory*, M. Baltin and C. Collins (eds), 148–202. Oxford: Blackwell.
- Truckenbrodt, H. 1995. Phonological Phrases: Their relation to syntax, focus and prominence. PhD dissertation, MIT.
- Uriagereka, J. 1999. Multiple spell-out. In *Working Minimalism*, S.D. Epstein and N. Hornstein (eds), 251–282. Cambridge MA: The MIT Press.
- Vikner, S. 1994. Scandinavian object shift and west Germanic scrambling. In *Studies in Scrambling: Movement and non-movement approaches to free word-order phenomena*, N. Corver and H. van Riemsdijk (eds), 487–517. Berlin: Mouton de Gruyter.
- Wurmbrand, S. 2001. *Infinitives: Restructuring and clause structure*. Berlin: Mouton de Gruyter.
- Wurmbrand, S. and J. Bobaljik. 2003. Relativized phases. Ms., McGill University and University of Connecticut.
- Zec, D. and S. Inkelas. 1990. Prosodically constrained syntax. In *The Phonology-Syntax Connection*, S. Inkelas and D. Zec (eds), 365–378. Chicago IL: University of Chicago Press.
- Zwart, J.-W. 1994. On Holmberg's generalization. In *Language and Cognition 4: Yearbook 1994 of the research group for theoretical and experimental linguistics of the University of Groningen*, A. de Boer, H. de Hoop and H. de Swart (eds), 229–242. University of Groningen.

Merge, derivational C-command, and subcategorization in a label-free Syntax*

T. Daniel Seely
Eastern Michigan University

Abstract

This paper considers certain properties and consequences of “label-free” syntax as proposed in Collins (2000, 2002). We focus on the generative procedure that produces labels and projection, namely, Merge and argue for the “simplest” form of this structure building operation: Merge $A, B = \{A, B\}$. This “simple” statement of Merge is motivated on Minimalist grounds, and it results in the elimination of labels (and projection). We then consider the consequences of labellessness for the definition of derivational c-command (as proposed in Epstein 1999 and Epstein et al. 1998). Finally, we explore Collins’ statement of subcategorization and selection, with respect to which c-command plays a central role, noting a number of problems and sketching possible solutions compatible with a strongly derivational, label-free system.

1. Introduction

This paper argues for a modification of Merge and explores the consequences of the modification for the derivational definition of c-command (developed in Epstein in a series of important recent papers). Following Collins (2000, 2002), I’ll attempt to defend the proposal that (1), the characterization of Merge given in Chomsky (1995) “Bare Phrase Structure,” (henceforth BPS) be replaced with (2):

- (1) “Merge A and B ” produces $\{A, \{A, B\}\}$, where A is the label of the derived category.
- (2) “Merge A and B ” produces $\{A, B\}$.

I’ll argue that (2) represents a simplification of Merge that is motivated on Minimalist grounds, and does not lose empirical coverage.

It will be argued further that the proposed simplification of Merge has as its consequence the elimination of labels, and more generally, the elimination of projection. If Merge is defined as in (2), then there are no labels nor projection (as labels and projection are characterized in BPS). Within the generative tradition,¹ Collins (2000,

2002) “Eliminating Labels” (hereafter EL) is the first to suggest that labels (and projection) can (and should) be eliminated. EL suggests that constituents be represented as in (3), not as in (4),

(3) {A, B}

(4) {A, {A, B}}

The present work attempts to advance this central insight of EL. I’ll argue that the source of the elimination of labels (and projection) is to be found in the modification of Merge (i.e. (2)). Viewing the matter derivationally, I ask the question: If representations are indeed label free (as proposed by Collins), why do they have this property; in other words, can labellessness be explained?

EL presents a set of important insights that motivate the present work. EL argues that (3) replace (4); and EL suggests that label-free syntax is tenable in that principles and operations of the syntax that appeal to labels (specifically, X' -theory, Selection, the Minimal Link Condition, and the PF Interface) can operate in an empirically adequate manner without labels. EL argues that the effects of labels can be deduced from independently motivated principles of the syntax. However, EL does not consider the consequences of the elimination of labels for the definition of Merge nor for the definition of c-command. But, an examination of the consequences of label-free syntax for Merge and c-command is important since labels and projection figure crucially in the BPS statement of Merge; indeed, Merge produces labels and projections, and labels figure prominently in the definition of c-command as well.

In section 2, I’ll argue that we can deduce that labels are syntactically “inert,” that labels cannot participate in syntactic relations. Label “inertness” follows from BPS, along with the hypothesis that derivational c-command is a necessary condition for the application of syntactic operations. I’ll attempt to show that in effect labels are “already” eliminated in the syntax.

I’ll argue in section 3 that the “actual” elimination of labels and projection follows directly from a revised version of Merge, that version given informally in (2), and that this simplification is well-motivated on Minimalist grounds. In section 2, I argue that labels are “inert.” But, although they are inert, labels (and projection) are still present in the representation of BPS constituent structure, i.e., a label is a member of the set which constitutes a constituent. In section 3, I’ll argue that labels and projections should be eliminated; that they are not merely inert, but rather non-existent.

As for c-command, I’ll argue in section 4 that it must be defined derivationally; that a representational definition of this crucial syntactic relation is not compatible with a label-free syntax. However, I will argue that the definition of derivational c-command, and more specifically the definition of “term” adopted from BPS in Epstein (1999) must be modified in order to carry out the label-free syntax program established by EL.

Finally, in sections 5 and 6 I’ll present a series of potential problems with the EL

theory of subcategorization, and certain other problems for the label-free program, and will sketch potential solutions.

2. **Deducing the elimination of labels from bare phrase structure, derivational C-command, and the derivational theory of syntactic relations**

EL considers four major areas where labels have traditionally been used:

- (5) a. X'-theory
- b. Selection (subcategorization)
- c. Minimal Link Condition
- d. PF Interface

EL argues that in each of these areas, labels need not be appealed to; relevant syntactic generalizations in these domains can "...be derived from the interaction of economy conditions, the properties of individual lexical items..., and interface conditions" (EL, p. 44)². Rather than review the details of EL's interesting treatment of (5), I'd like to start my discussion with another area where labels have figured prominently, specifically, in the definition of the relation of c-command. The standard representational definition of c-command appeals to the notion "first branching node." But if a "first branching node" is a phrasal label, the elimination of labels will clearly impact the representational definition of c-command – similarly, as we'll see in detail below, for derivational c-command.³ C-command, moreover, plays a central role in EL's theory of Selection, and in EL's recasting of the Minimal Link Condition. But the matter of how c-command is defined in a theory without labels is not addressed in EL. Since c-command is (crucially) exploited in the EL program, the definition of c-command in a label-free syntax becomes important. Indeed, within EL's own program, c-command is arguably the single most important elementary syntactic relation.

In this section, I will argue that the "elimination" of labels is, in fact, deducible from independently motivated mechanisms of the grammar. Specifically, I will show that the claim in (6),

- (6) Labels cannot be involved in syntactic operations; labels are syntactically inert, and are, in effect, "already" eliminated (i.e. for all intents and purposes, absent) from the syntax.

is deducible from the derivational definition of c-command proposed in Epstein (1999) and Epstein et al. 1998 combined with the proposal that derivational c-command between X and Y is a necessary condition for a syntactic operation to involve X and Y (like, for example, feature "checking" between X and Y). EL essentially ASSERTS that the labels of phrasal categories can be eliminated. What is argued here is that

elimination of the labels of phrasal categories can, in fact, be DEDUCED from a certain set of (natural) definitions and principles. I present the deduction itself, with rather little commentary, in this section, which lends support to the central claim of EL that labels can, and should, be eliminated. But, our paths to that conclusion, and certain key details of the resulting label-free syntax, are different.

2.1 The definition of merge in bare phrase structure

Consider (7), the characterization of Merge from BPS

- (7) The algorithm for the Merge of A and B, where A projects:
- i. create the set {A, B}
 - ii. make a copy of A
 - iii. create the two-membered set consisting of the copied A and the set {A, B}; thus create {A, {A, B}} (see BPS: 395–400)

Merge “puts” two elements A and B into a set (i.e. Merge creates a set containing A and B), thus {A, B}. But Merge ALSO renders the set {A, B} that it creates a member of another set, a set containing the initial set {A, B} and what is called the label of the second set. Thus, Merge creates the set {A, {A, B}}, which consists of A (called the label, and italicized merely for ease of exposition) and the set {A, B}. What is called the label, namely A, is nothing more than a copy of A. In BPS, the label, A, of the set {A, {A, B}} IS IDENTIFIED WITH A.⁴ BPS states that relative to the set {A, {A, B}} where this set is formed by Merge of A and B: “A is either A or B,” (BPS: 397; my emphasis, TDS). Consequently, in the set {A, {A, B}}, the label, A, is the category A (A and A are instances of the same thing).⁵ Let me point out further that the copy-and-build-second-set suboperation of Merge is basically what projection is in the BPS system; i.e. projection is steps ii and iii of (7) above. We see, then, that Merge in BPS is a three-step operation; it involves the creation of two sets (steps i and iii) and it involves the copying of the head of one of the “mergees” (step ii).

2.2 The Derivational Definition of c-command, the notion “term,” and the centrality of c-command in syntactic operations

Consider next the derivational definition of c-command given in Epstein (1999):

- (8) Derivational Definition of C-command (from Epstein 1999: 329):
 X c-commands all and only the terms of the category Y
 with which X was paired (by Merge or by Move) in the course of the
 derivation.

This definition appeals directly to the notion “term.” The definition of “term” adopted by Epstein is as follows. Note that this definition of term, from Chomsky (1995), is entirely (set-) representational, i.e. defined on the output representations created by Merge, as characterized in (7):

- (9) Definition of “term:” for any structure K,
i. K is a term of K
ii. if L is a term of K, then the members of the members of L are terms of K From Chomsky (1995)

It was pointed out above that EL does not present an explicit definition of c-command, even though c-command figures crucially in the EL theory of subcategorization and in the EL reformulation of the Minimal Link Condition. Since there is no definition of “c-command” given in EL, it is not clear that EL would accept (8)/(9). However, I’ll argue later that the standardly assumed, “first branching node” definition of c-command, which is purely representational, is not compatible with a label-free syntax. In fact, I’ll suggest that a derivational definition of c-command is required. Moreover, I adopt the view of Epstein (1994/99) that the derivational definition of c-command is superior to the representational definition (I presuppose Epstein’s argumentation here). And I adopt Epstein’s specific formulation as given in (8) and (9) to keep the present discussion as concrete as possible.

Finally, consider (10), proposed by Epstein (1999):

- (10) X may enter into a syntactic relation with Y iff X derivationally c-commands Y.

From (10), it follows that c-command between X and Y is a necessary (but not always sufficient) condition for a syntactic operation to involve X and Y.

So far, we have put into place the BPS characterization of Merge; Epstein’s derivational definition of c-command, which make crucial use of BPS’s notion of “term”; and we’ve reviewed the natural assumption that derivational c-command is a necessary condition for syntactic operations. I will now argue that it follows from Merge, Derivational c-command, and (10) that labels cannot participate in syntactic operations; that the “elimination” of labels is, in fact, deducible.

2.3 Labels are never derivationally c-commanded by any category

There is an interesting (and, as far as I know, unnoticed) consequence of derivational c-command, a consequence which arises given the definition of “term” that derivational c-command assumes; the consequence is this:

- (11) The label of a category X is never derivationally c-commanded (by any category Y).

The label of a category X is never derivationally c-commanded because the label of the category X is by definition never a term of X (and recall that A c-commands all and only the terms of the category with which A is concatenated). To illustrate the point, consider (12), the output of the Merge of *the* and *picture*, under the definition of Merge given in PBS:

- (12) {*the*, {*the*, *picture*}}

The entire object $\{the, \{the, picture\}\}$ is a term by (9i) – repeated below for ease of reference,

- (9) Definition of “term:” for any structure K,
 - i. K is a term of K
 - ii. if L is a term of K, then the members of the members of L are terms of K
 From Chomsky (1995)

First, the set $\{the, \{the, picture\}\} = K$, so by (9)i this is a term. Next, the set $\{the, \{the, picture\}\}$ in (12) has two members: *the* (called the label) and the set $\{the, picture\}$. The first member of the set $\{the, \{the, picture\}\}$, namely *the*, is not a member of a member, and therefore *the* is not a term of $\{the, \{the, picture\}\}$. The second member of the set $\{the, \{the, picture\}\}$, namely the set $\{the, picture\}$ DOES itself have two members, *the* and *picture*. Therefore both *the* and *picture* are each terms of $\{the, \{the, picture\}\}$ (by (9ii)). Overall, then the set $\{the, \{the, picture\}\}$ has three terms: (i) $\{the, \{the, picture\}\}$, (ii) *the*, and (iii) *picture*. But, the label *the* is not a term of $\{the, \{the, picture\}\}$.

Let us now merge the object in (12) with *see*. This Merge of *see* and $\{the, \{the, picture\}\}$ produces (13), assuming that *see* projects:

- (13) $\{see, \{see, \{the, \{the, picture\}\}\}\}$

In (13), the lexical category *see* does not derivationally c-command the label, *the*, of the category $\{the, \{the, picture\}\}$ that *see* is merged with. Recall, the label *the* is not a term of $\{the, \{the, picture\}\}$ and *see* by definition derivationally c-commands all and only the terms of what *see* is Merged with. Thus, (13) illustrates (14)

- (14) The label of a category X is not derivationally c-commanded by the category Y with which X is concatenated (by Merge or Move).

Informally put, the label of X is never locally derivationally c-commanded by Y (where by “locally” we mean “by the category with which X itself is concatenated”) since the label of X is not a term of X (the label is never a member of a member of X).

But in fact the stronger claim of (11), i.e. that a label is never derivationally c-commanded, locally or non-locally, also follows. The label of X is not derivationally c-command by the category Y with which X is concatenated, nor is the label of X derivationally c-commanded by any “higher” category Z which is Merged with Y. To illustrate, suppose we Merge the object in (13) with *Bill*, and suppose that the verb projects. This Merge produces (15)

- (15) $\{\{see, \{Bill, \{see, \{see, \{the, \{the, picture\}\}\}\}\}\}$

Bill derivationally c-commands all and only the terms of the category with which *Bill* is Merged. *Bill* was merged with the category in (15a),

- (15) a. $\{see, \{see, \{the, \{the, picture\}\}\}\}$

This entire object is a term (“for any structure K, K is a term of K”). Thus, *Bill* c-commands the entire object. The set $\{see, \{see, \{the, \{the, picture\}\}\}$ with which *Bill*

was Merged has two members (“if L is a term of K then the members of the members of L are terms of K ”):

- (15) b. The members of $\{see, \{see, \{the, \{the, picture\}\}\}\}$ are
 member 1: *see*
 member 2: $\{see, \{the, \{the, picture\}\}\}$

Since it is not a member of a member, *see* is not a term of $\{see, \{see, \{the, \{the, picture\}\}\}\}$; thus, *Bill* does not c-command *see*. Member 2, i.e. $\{see, \{the, \{the, picture\}\}\}$, does have members, namely *see* and the set $\{the, \{the, picture\}\}$. Thus, *see* and $\{the, \{the, picture\}\}$ are members of the members (of L where L is a term of K), and so are terms. As a consequence of this, *Bill* derivationally c-commands *see* and $\{the, \{the, picture\}\}$. Notice that *Bill* derivationally c-commands the lexical item *see*, and *Bill* c-commands the SET $\{the, \{the, picture\}\}$.

So far so good. But notice that *Bill* does not derivationally c-command the label of $\{the, \{the, picture\}\}$. As we just saw, the set $\{the, \{the, picture\}\}$ is a member of a member of the set $\{see, \{see, \{the, \{the, picture\}\}\}\}$. The set $\{the, \{the, picture\}\}$ thus counts as a term of the larger set. Since $\{the, \{the, picture\}\}$ is a term of the larger set, then we now appeal to the second part of the definition of term in (9), repeated here again for ease of reference,

- (9) Definition of “term:” for any structure K ,
 i. K is a term of K
 ii. if L is a term of K , then the members of the members of L are terms of K

So in the present case, the set $\{the, \{the, picture\}\}$ counts as L of (9)ii. And the members of the members of $L = \{the, \{the, picture\}\}$ will count as terms; but note that although *the* is a member of $L = \{the, \{the, picture\}\}$, *the* is not a member of a member of this set. Therefore the label *the* is NOT a term. Overall, then, *Bill* does not c-command the label *the*; and nothing “higher” than *Bill* will c-command the label either.

Labels are never derivationally c-commanded since labels are never terms. A label is never a structure K , and hence a label can’t be a term under clause (9)i. A label is produced by the structure building operations Merge and Move; but the label itself is not the output of the structure building operations. The output of the Merge of A and B is the set $\{A, \{A, B\}\}$; the label of that set is produced by Merge, but the label itself is not a “structure”. Moreover, a label is never a member of a member of a term of K . We see, then, that (11) follows.

2.4 Labels never derivationally c-command (any category)

Not only are labels never c-commanded, but moreover, labels do not derivationally c-command other categories. This follows straightforwardly since labels are never themselves Merged with any category (and more generally, labels themselves are never concatenated, by Merge or Move, with any category). A label is “created” by Merge, but the label itself is not the final output of Merge. Rather, a label is always contained

within the set that is the final output of Merge. The final output of the Merge of A and B is not the label A, but rather the set {A, {A, B}}, which contains the label. And within this set, the label A is inaccessible to Merge.

2.5 Labels are syntactically inert; they are, in effect, “already” eliminated

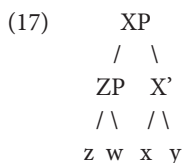
Notice, then, that in effect, labels are already “eliminated.” This is deducible from (i) the definition of Merge in BPS; (ii) the definition of derivational c-command; and (iii) the hypothesis that derivational c-command is a necessary condition for the application of a syntactic operation. We have argued that it follows from the above three premises that labels are not c-commanded and do not themselves c-command any category. THEREFORE, LABELS CANNOT PARTICIPATE IN SYNTACTIC OPERATIONS; THEY ARE SYNTACTICALLY INERT. Labels are, in effect, “already” eliminated.

Two questions (at least) immediately arise from the above deduction of the syntactic inertness of labels:

- (16) a. Why are labels proposed in BPS in the first place?
- b. Does the “elimination” (i.e. the syntactic inertness) of labels result in the loss of important information?

2.6 Why are labels proposed in the first place? Are labels necessary for interface interpretation?

Question (16a) is considered in more detail in section 4. But note that, even without derivational c-command, BPS does, at least implicitly, realize that labels play no role in the syntax; labels are not terms and only terms are “functioning elements” of the syntax – thus labels are not functioning elements. Consider (17), which is an “informal,” graph-theoretic transposition of BPS’s set-theoretic phrasal construct:



ZP names the actual set {z, {z, w}}; and X' names the set {x, {x, y}}; and XP represents {x, {{z, {z, w}}, {x, {x, y}}}}. Regarding (17), BPS states that “The functioning elements in [(17)] are at most the nodes of the informal representation: that is, the lexical terminals z, w, x, y; the intermediate element X' and its sister ZP; and the “root element” ZP standing for the full structure formed.” BPS then states “These [elements] alone can be functioning elements; call them the *terms* of XP...” and finally (and crucially for the present discussion), “Terms correspond to nodes of the informal representations, WHERE EACH NODE IS UNDERSTOOD TO STAND FOR THE SUB-TREE OF WHICH IT IS THE ROOT” (BPS: 398–399, my emphasis, TDS). It is clear from the last quote that the node X' in (17) does NOT represent the label of the set {x, {x, y}}; but rather X' represents the

entire set $\{x, \{x, y\}\}$; i.e. it represents “the sub-tree of which it is the root.” The entire set $\{x, \{x, y\}\}$ is a functioning element (it is a term) but the label of this set, namely x , is NOT a term and is NOT a functioning element. There is something of a mis-match between the graph-theoretic and the set-theoretic representations of BPS phrases. Compare (18a) and (18b) for example:

- (18) a. X' b. $\{x, \{x, y\}\}$
 $/ \backslash$
 $x \quad y$

We might be tempted to think of the node X' as the label of the set in (18)b. But, the node X' does NOT equal the label x of $\{x, \{x, y\}\}$. Rather, X' is just the name of the entire set $\{x, \{x, y\}\}$.

To summarize, we have deduced that labels (understood in the sense of BPS) are syntactically “inert.” They CANNOT play any role in the syntax; and this seems to be recognized even in BPS itself. This immediately gives rise to the question in (16a), that is, why are labels proposed in BPS in the first place? It can’t be because the label is required by the syntax; indeed, the syntax can’t “use” the label at all, the label is not a “functioning element.” Rather, according to BPS, labels are required AFTER the syntax (by the interfaces). BPS states:

- (19) “Applied to two objects α and β , Merge forms the new object γ . What is γ ? γ must be constituted somehow from the two items α and β ...The simplest object constructed from α and β is the set $\{\alpha, \beta\}$, so we take γ to be at least this set, where α and β are the *constituents* of γ . Does that suffice? *Output conditions dictate otherwise; thus verbal and nominal elements are interpreted differently at LF and behave differently in the phonological component.* γ must therefore at least (and we assume at most) be of the form $\{\delta, \{\alpha, \beta\}\}$, where δ identifies the relevant properties of γ ; call δ the *label* of γ .” (BPS:396)

The idea here seems to be that the LF and PF interfaces must be able to distinguish what are traditionally referred to as NPs vs. VPs. Thus, LF must recognize that the set $\{A, B\}$ is verbal or nominal. And the implication is that the interfaces can distinguish a verbal from a nominal element only with labels. Looking at the matter in a graph-theoretic way, we might say that the interfaces must distinguish [destroyed it] from [destruction of it] and that the interfaces can make the distinction only by “seeing” the nodes V' and N' . Thus:

- (20) a. V' b. N'
 $/ \quad \backslash$ $/ \quad \backslash$
 $V \quad NP$ $N \quad NP$
 $| \quad |$ $| \quad |$
 destroy it destruction it

The traditional idea is that the two elements *destroy* and *it* COMBINED are/is a verbal object; whereas the elements *destruction* and *it* COMBINED are/is a nominal object.

But recall from our discuss above that the nodes V' in (20a) and N' in (20b) do NOT represent the labels of the corresponding set-theoretic object of BPS. In more precise BPS terms, the object *destroy it* is represented as:

- (21) a. {*destroy*, {*destroy*, it}}

and the object *destruction of it* is represented as in

- (21) b. {*destruction*, {*destruction*, it}}

The entire set (21a) is what V' stands for in (20a). But the interfaces can't inspect just this set {*destroy*, {*destroy*, it}} and determine that it is "verbal" or "nominal". Rather the interface must LOOK INSIDE the set; the interface must (apparently) "look" at the label of the set, which is a MEMBER of the set. It is not clear, however, how the label facilities this. If the interfaces must in fact look inside the set to see the label; then why couldn't the interfaces look inside what BPS claims is the "simplest" set, namely {*destroy*, it} and "see" the verbal element *destroy*? We have to stipulate that the label is what the interface looks at to determine how to interpret a set, to interpret that set as verbal or nominal. So it is not clear that labels are required even in this sense.

2.7 Does the inclusion of labels create trouble?

As for question (16)b, namely, "Does the elimination of labels result in the loss of information?" note that although a category X does not derivationally c-command the label of the category Y with which X is concatenated; X DOES derivationally c-command the category with which the label is IDENTIFIED. To illustrate, consider (22), which was discussed in a different context above,

- (22) {*see*, {*see*, {*the*, {*the*, picture}}}}

As shown, *see* does not derivationally c-command the label *the*. However, *see* does derivationally c-command the lexical category *the*. The label *the* is not a term of {*the*, {*the*, picture}} since the label *the* is not a member of a member of {*the*, {*the*, picture}}}. However, the lexical category *the* IS a term of {*the*, {*the*, picture}} since it is a member of a member of {*the*, {*the*, picture}}}. We pointed out earlier that the label *the* is identified with (i.e. the label is an instance of) *the*. The label *the* and the lexical category *the* are occurrences of precisely the same thing. Overall, then, there is nothing lost relative to the specific information contained in the label itself. Specifically, *see* can have a relation with *the*. *The* is identical with the label *the*. Thus, in effect, *see* does not "lose sight of" the information contained in *the* (even though *see* does not c-command *the*).

So, again, an important question arises: are labels necessary? Or, to put the matter historically, why were/are labels postulated to begin with? The hypothesis, which I share with EL, is that labels are not necessary. But the question of why labels are postulated within BPS remains, and will be taken up in more detail a bit later.

In this section we presented a deduction of the “elimination” of labels. The argument is summarized as follows:

- Premise 1: “phrases” and labels are defined as in BPS; i.e. assume Merge as in BPS
Premise 2: Derivational c-command is defined as in Epstein (1999)
Premise 3: Derivational c-command is a necessary condition for syntactic relations.
THEREFORE: labels do not participate in syntactic relations.

Since labels, as defined in BPS, are not terms, and since derivational c-command crucially appeals to terms (X derivationally c-commands all and only the terms of Y with which X is Merged), it follows that labels never c-command nor are they c-commanded by any other category. Since c-command is required for a syntactic relation, then labels can’t participate in syntactic relations.

Having completed the deduction, let us turn to other issues in Collin’s label-free syntax program.

3. “Simplifying” merge results in the elimination of labels and projection

In section 2 above, it was argued that although labels are indeed postulated in BPS representations (i.e. the label *A* is a member of the set $\{A, \{A, B\}\}$, labels themselves are syntactically inert. In this section I argue that the ACTUAL elimination of labels (and projection) results from a modification (which arguably represents a simplification⁶) of the operation Merge, as Merge is defined in BPS. I argue that the simplification of Merge is desirable on Minimalist grounds. Like EL, I argue that the labels of phrasal categories can (and, in fact, should) be eliminated; that is, that the label, as defined in BPS, is NOT part of constituent structure representation. However, I consider a set of arguments for this conclusion, and I explore consequences of it, that EL does not.

Both PBS and EL note that the “simplest” statement of Merge is:

- (23) “Simplest” algorithm for Merge of *A*, *B*:
Create the set $\{A, B\}$

What Merge does here is (merely) establish a relationship between *A* and *B*, by putting *A* and *B* into a set. That’s it.

What BPS actually adopts, however, is the more complex mechanism with three sub-operations, the details of which were considered above in section 2.1:

- (24) “Actual” PBS algorithm for the Merge of *A* and *B* is:
i. create the set $\{A, B\}$
ii. “make” a copy of *A* (more generally: make a copy of whichever element, *A* or *B*, “projects”)⁷
iii. create the set consisting of the copied *A* and the set $\{A, B\}$; thus create $\{A, \{A, B\}\}$

Below, we argue that the “simplified” Merge, as in (23), is motivated on minimalist grounds. And, crucially, this simplification of Merge has two immediate consequences:

- (25) a. There are no labels, as labels are characterized in BPS.
- b. There is no projection, as projection is characterized in BPS.

Recall that in BPS, the label, *A*, of the set, $\{A, \{A, B\}\}$ is identical with (since it is a copy of) *A*. Since simplified Merge (23) eliminates step ii of (24), where step ii is the label-creating suboperation, then labels, AS CHARACTERIZED IN BPS, are eliminated. Furthermore, since steps ii and iii of (24) are eliminated in simplified Merge, then to the extent that steps ii and iii represent projection, it follows that projection AS CHARACTERIZED IN BPS is eliminated, too.

As noted, EL proposes that representations as in (26), which contain a label, be replaced with representations as in (27) where the label is eliminated.

(26) $\{A, \{A, B\}\}$

(27) $\{A, B\}$

But it is more than just the label, *A*, that is eliminated in (27). If only the label itself were eliminated from (26) the result would not be (27), but rather $\{\{A, B\}\}$. Also eliminated from (26) is the set which contains the label. This set, i.e. the set $\{A, \{A, B\}\}$, represents, at least in part, the projection of *A*. Thus, it is not just the label that is eliminated; projection is eliminated as well.

It is important to stress that, viewed derivationally, it is not labels and projection that are eliminated in and of themselves, RATHER WHAT IS ACTUALLY ELIMINATED ARE TWO SUBOPERATIONS OF THE “COMPLEX” OPERATION MERGE. It is a consequence of adopting the “simplest” version of Merge, namely, (23), that there are no phrasal labels nor projections, i.e. it is a consequence of the simplification of Merge that phrases are represented as in (27), and not represented as in (26). I’ll argue that this simplification of Merge is motivated on Minimalist grounds. The absence of labels is an immediate consequence of a well-motivated simplification of a fundamental, and arguably necessary, structure building (derivational) operation, namely Merge as in (23). In short, the question I am asking is: If indeed (27) is the “right” type of representation, what is the nature of the generative procedure from which the relevant properties of these representations could be deduced? I will then focus on the implications of this (arguably necessary) modification of Merge for the statement of (derivational) c-command. I’ll argue that the modification of Merge forces a modification of the definition of (derivational) c-command; and more specifically a (rather simple) modification of the definition of “term.” The consequences of this modified version of c-command for EL’s theory of subcategorization will then be considered. Ultimately, it will be argued that we must render explicit the definition of c-command, since, on the standardly assumed definitions of c-command (both representational and derivational defini-

tions), certain problems with EL's label-free framework arise, particularly with EL's theory of subcategorization.

3.1 Three arguments for Merge as a one-step operation

In this subsection, I present three arguments for the simplification of Merge in (23). I'll argue (i) that the simplified version of Merge is motivated by the Inclusiveness condition to the extent that the simplified Merge requires fewer elements beyond the features of lexical items, fewer elements, that is, than Merge as defined in BPS; (ii) that Merge, simplified as in (23), eliminates an undesirable redundancy between labels and categories, and (iii) that the simplified Merge dissolves problems with the notion of "label" in BPS.

3.1.1 *Is simplified Merge motivated by Inclusiveness?*

Chomsky (1995) in "Categories and Transformations" (hereafter CT) formulates the Inclusiveness condition in this way:

- (28) "Another natural condition is that outputs consist of nothing beyond properties of items of the lexicon (lexical features) – in other words, that the interface levels consist of nothing more than arrangements of lexical features." (CT:225)

It follows from the Inclusiveness condition, which is arguably THE fundamental formal characterization of the Minimalist approach, that we should posit in the syntax as little as possible beyond the features of lexical items; thus, the syntax, to as great an extent as possible, should not appeal to indices, bar-levels, relations, etc.

As characterized in BPS, Merge takes as input the elements A and B, and Merge gives as output the set {A, {A, B}}. Note that Merge creates an identity relation between the label A and the category A. This identity relation is not itself a lexical feature, nor is it a combination of features. The relation itself does not occur in the lexicon, and therefore it violates the Inclusiveness condition. Simplified Merge, (23), does not involve the identity relation, and in fact it cannot, since no label is created. Thus, the simplified version of Merge does not violate Inclusiveness relative to the identity relation.

3.1.2 *Simplified Merge avoids possible redundancy*

As noted, simplified Merge (23) (Merge A, B = {A, B}) results in the elimination of phrasal labels and projection. I argue here that this is a desirable result since phrasal category labels, as defined in BPS, are REDUNDANT with independently motivated elements of the grammar; specifically, the information that labels themselves encode (and this is particularly true in the case of the Merger of lexical categories) is independently available, and independently necessary. Therefore, phrasal labels SHOULD be eliminated.

Recall that in BPS, the label of a phrasal category is IDENTIFIED with (certain) other categories. The idea in BPS is that the operation Merge takes, say, *see* and *Mary*

as input and gives as output the set: $\{see, \{see, Mary\}\}$. The label (i.e. *see*) of this set is IDENTIFIED with the lexical item, *see*. (Recall that BPS states that relative to the set $\{A, \{A, B\}\}$ where this set is formed by Merger of A and B: “A is either A or B,” BPS: 397.) If what is called the label of the derived set is identified with the lexical item *see*, in the specific case under consideration here, then the label is the lexical item *see*. That is, the label of the set $\{see, \{see, Mary\}\}$ is identified with (i.e. it is) the lexical item *see*. So the label, in this case, is entirely redundant with the lexical category with which the label is identified. The label *see* is precisely the lexical category *see*. Thus, there is no information contained in the label itself that is not already present in the derived set which contains the label and the lexical category. Lexical categories are necessary; this is a fundamental assumption of all syntax.⁸ As we will argue in some detail in section 4, the label A is made available at a different point in the derivation than the lexical category A. But the information contained in the label itself is already present in the derivation; eliminating the label does not result in the loss of this information. Since the label is redundant with a lexical category, then the label ‘should’ be eliminated.

3.1.3 What is a label?

The labels of phrases are problematic; since eliminating phrasal labels eliminates the problems with these labels, it follows that the labels of phrases should be eliminated.

In DBP the label of the set $\{see, \{see, Mary\}\}$ is identified with the verb, *see*. This identification raises certain questions. For example, the verb *see* has a complement (in this case *Mary*). Does it follow from the identity relation that the label, *see*, also has this same complement? Does the label have all the selectional and featural properties of the item *see*? Since the lexical category can move (under head movement) does this mean that the label can also move (under the same circumstances)?

The point here is that questions involving the status of the label in BPS are eliminated with the elimination of the label: quite simply, if there is no label, then there is no question about what a label is--and it is not clear what a phrasal label is exactly. Eliminating labels, eliminates these questions.

In this section I have attempted to motivate a simplification of Merge. This simplification of Merge automatically results in the elimination of labels and projections, as labels and projection are characterized in BPS. The main claim is simple: if there is no copy and no set created from that copy (i.e. if we remove from (24) steps ii and iii), then there are no phrasal labels nor projection. The simplest, and arguably necessary, generative procedure produces no labels nor projections.

So far then, I have attempted to give added support to the central assertion of EL. And, like EL, I must consider how principles of the syntax that make explicit reference to labels and projection are to be stated without labels and projections. To that end, I will consider the implications of simplified Merge (23) for the definition of derivational c-command.

4. Some consequences of the simplification of Merge for derivational c-command

In this section I consider some consequences of the proposed simplification of Merge (and more generally of the proposed elimination of labels and projection) for the derivational definition of c-command. This is important since it will be argued that a label-free syntax is not compatible with a representational definition of c-command. We argue that once we adopt Merge, as in (23), we must assume derivational c-command. And, as noted above, c-command plays an important role in EL's theory of subcategorization. To fully evaluate that theory of subcategorization, it is crucial to have a precise definition of (derivational) c-command in place.

The section is organized as follows. First, we argue that the traditional "first branching nodes" definition of representational c-command is not compatible with a label-free syntax; a derivational definition, on the other hand, is compatible. Second, we argue that the definition of derivational c-command (of Epstein (1999)), and specifically the notion "term," must be modified to accommodate the elimination of labels and projections. Finally, we point out certain problems with the EL theory of subcategorization, which relies crucially on c-command, and suggest tentative solutions to these problems.

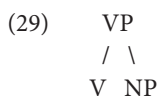
The problems with the EL theory of subcategorization that are raised in this section also help to answer a question left open in section 2.5 and 2.6. We deduced that labels are syntactically inert, and this gives rise to the question: why are labels posited in the first place (if they play no role in syntactic operations)? We pointed out that a label is a copy of (i.e. the label is identified with) a lexical category. Consequently, the information contained in a label is redundant with the lexical category with which the label is identified. So again, why are there labels and why is there projection? The answer, in part, is this: although the information encoded in a label *L* is exactly the information contained in the lexical category that *L* is identified with, THE POINT AT WHICH THIS INFORMATION IS AVAILABLE IS DIFFERENT. On one view, projection is a device for making the same information available at different points in the derivation. For example, the lexical information of the lexical category *see* is available at the point when *see* is Merged with, say, *Bill* to produce the object {*see*, *Bill*}. What projection does is allow this same lexical information to be available again at the point when the object {*see*, *Bill*} is Merged with, say, *Sue* to produce {*Sue*, {*see*, *Bill*}}. Projection allows *see* to behave as though *it* is being Merged directly with *Sue*.

Note furthermore that a label is a representational construct. A label encodes the information that was available at an earlier stage of the derivation; given Merge as defined in BPS, a label *L* basically tells us that the lexical category that *L* is identified with was Merged with some other category, and that Merger was at an earlier point in the derivation. Given that labels are representational constructs (as are phrase markers more generally), the elimination of labels seems to move the syntax one step closer to a purely derivational system.

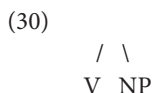
4.1 A note on representational c-command without labels

Before turning to the implications of the elimination of labels (more specifically, the proposed simplification of Merge which results in the absence of labels/projection) for the derivational definition of c-command, let me make a brief point regarding label-free syntax and representational c-command.

Consider the representational view of c-command (under the traditional “first branching node” definition). It is not entirely clear how a traditional graph-theoretic structure like (29)



would be represented without labels. If there is no VP label, does (29) become (30), for example?



In other words, is there still a “node” (and a branching node) above V and NP, but this node has no label? If there is no node, then we must abandon the standard representational definition of c-command (since that definition crucially relies on the notion “branching node” and if there is no node at all above V and NP in (30), then there is no branching node). If there is a node, but no actual label for that node, we could presumably maintain the representational definition of c-command; thus V would c-command NP since the first branching node dominating V (the “empty” node) would (presumably) dominate NP. But the status of such an “empty” node is unclear. Would it be interpretable? Presumably not, since it has no features. And if it is not interpretable, how could it survive at the LF interface?

What is clear is that once we adopt the BPS characterization of phrases, we must modify the traditional representational definition of c-command. Thus in a set-theoretic model, we’d have to use some notion of “containment” rather than “dominance.” Consider, for instance, $\{\text{read}, \{\text{Jim}, \{\text{read}, \{\text{read}, \{\text{the}, \{\text{the}, \text{man}\}\}\}\}\}\}$, which is the BPS object representing “Jim read the book.” There are no “branching nodes” in the traditional sense. We’d need a definition like “X c-commands Y iff X and Y are members of the set S; or X c-commands Y if Y is a member of a member of the same set as X.”

But there is a much deeper point. As soon as we accept Merge, as in (23) or (24), then, given the argumentation of Epstein (1999), we should assume a *derivational* definition of c-command. The representational view is not explanatory (see Epstein (1999) for detailed discussion).

Let us turn, then, to the derivational account of c-command.

4.2 Some consequence of the elimination of labels for derivationalal c-command as it relates to EL's theory of subcategorization

Suppose Merge is defined as in (31), repeated here:

(31) Algorithm for Merge of A, B: Create the set {A, B}

And suppose that we adopt, verbatim, Epstein's definition of derivationalal c-command, repeated below:

- (32) Derivationalal Definition of C-command (from Epstein (1999:329):
X c-commands all and only the terms of the category Y with which X was paired (by Merge or by Move) in the course of the derivation.
- (33) for any structure K,
i. K is a term of K
ii. if L is a term of K, then the members of the members of L are terms of K
From Chomsky (1995)

Taken just this far, we confront an immediate problem for the EL theory subcategorization, and we confront a related problem for the derivationalal theory of syntactic relations. To illustrate the subcategorization problem, suppose we Merge *the* and *picture* producing (by (31)), the object in (34)

(34) {the, picture}

Suppose next that we Merge (via (31)) *see* with the object in (34) to produce (35):

(35) {see, {the, picture}}

Here, *see* derivationally c-commands the object {the, picture}; *see* is Merged with {the, picture} and {the, picture} is a term (by (33)i). But notice that *see* does NOT c-command *the*, and *see* does not c-command *picture*. This is because neither *the* nor *picture* is a term of {the, picture} (and *see* derivationally c-commands all and only the terms of the category with which *see* is Merged). The object {the, picture} has two members: *the* and *picture*. But the members *the* and *picture* are not members of a member and therefore neither is a term of {the, picture}. Since *see* derivationally c-commands all and only the terms of the category with which *see* is concatenated (concatenated in this case by our modified version of Merge), and since *the* and *picture* are NOT terms of the category with which *see* is concatenated, then *see* does not c-command *the* nor *picture*.⁹

This result poses a problem for EL's theory of subcategorization. Informally stated, the problem is this: with respect to (35), *see* does not c-command *the*; however, EL's theory of subcategorization crucially assumes that *see* DOES c-command *the*. Without this c-command relation, the subcategorization requirements of *see* cannot be satisfied under EL's assumptions. Notice, moreover, that this represents a much more general problem. Basically, if we Merge (Merge in its proposed, simplified form) the

lexical items A and B to produce {A, B}, and then we Merge C with {A, B} to produce {C, {A, B}}, C will derivationally c-command the whole object {A, B}, but C will not c-command the lexical items A and B. However, there is evidence that C does participate in syntactic relations with A and B. Thus, a subject (=C) can bind a direct object (=B). But if there is no derivational c-command relation, then, under the assumption that c-command is a necessary condition for syntactic phenomena such as binding, then even the simplest binding relations would be incorrectly disallowed.

Before moving to the more formal statement of this problem relative to the EL theory of subcategorization, let me make clear that I am not, at this point, challenging any specific proposal in EL. I am not arguing that the problem I am now developing exists internal to the specific workings of EL. It is true, however, that EL's theory of subcategorization appeals to c-command. It is also true that EL does not render explicit the definition of c-command that it assumes (whether derivational or representational). What I seek to do here is consider a precise definition of c-command, a definition that is consistent with a label-free syntax (indeed, I have argued that derivational c-command is required by a label-free syntax), and try to determine if that definition works within the EL theory of subcategorization. It is unclear that the EL theory of subcategorization can be adequately evaluated otherwise, since without a precise definition of c-command, it is not clear what predictions that theory actually makes.

4.3 A problem for the EL theory of subcategorization

Let's assume that *see* has a subcategorization feature (let's assume that feature is +D). EL assumes further that the subcategorization feature of a head must be "checked," where feature "checking" is accomplished through EL's modified version of the more general feature "checking" system proposed by Chomsky (2000, 2001), i.e. the Probe-Goal analysis. Basically, features are "checked" through the syntactic operation Agree. Now, in a theory WITH labels the checking of the subcategorization feature of *see* can be done as follows (to state the matter informally, which suffices for present purposes): the subcategorization feature of *see* is satisfied (i.e. "checked") if *see* is Merged with a DP. But in a theory WITHOUT labels (like "DP"), feature "checking" must be handled differently.

EL's theory of selection/subcategorization assumes that

- (36) a. the subcategorization feature of a lexical head X must be satisfied (i.e. "checked/deleted")
- b. feature "checking" between X and Y takes place under the relation Match (as Match is stated in Chomsky (2000, 2001); i.e. X and Y must Match for the feature(s) F (X and Y must be identical for the feature F, but not necessarily for the value of F).

The EL theory of subcategorization also assumes, crucially, that

- (37) a. For Y to “check” the features of X, X must c-command Y.
 b. Feature checking obeys Minimality

Minimality for EL is as follows:

- (38) If X selects Y (where Y is a lexical category), then *X Z Y
 where Z intervenes between X and Y, and Z is any lexical category.

Finally, EL defines “intervention” as follows:

- (39) Z intervenes between X and Y if X c-commands Z, and Z c-commands Y.

Notice that c-command figures directly in the central (37a) and in (39), but c-command is undefined in EL.

Assuming the definition of Merge in (23) – Merge A and B gives {A, B}; and assuming the explicit definition of derivational c-command given in (32) and (33); and assuming the EL theory of subcategorization traced above, let us return to (35), repeated below:

- (35) {see, {the, picture}}

The lexical item *see* must have its subcategorization feature (+D) checked (by (36a)). The potential checker is *the*, since *the* Matches *see* for the feature D. For *the* to check *see*’s feature, *see* must (locally) c-command *the* (by (37)–(38)). However, as we argued above, *see* does not derivationally c-command *the* (nor is it clear how representational c-command could be successfully applied in the label (node) free EL system). Thus, feature checking cannot take place, and (35) is incorrectly disallowed as a subcategorization (i.e. feature checking) violation. In fact, it is unclear that subcategorization can ever be satisfied.

4.4 Eliminating just labels ≠ eliminating labels and projection

As a brief side note, recall that it was pointed out above that EL eliminates more than just labels. Consider the BPS construct {A, {A, B}} which results from the Merge (as defined in BPS) of A and B. If we eliminated from {A, {A, B}} just the label, A, the result would be {{A, B}}. In order to produce {{A, B}}, Merge would have to put A and B into the set {A, B}, and then render that set the sole member of another unit set, one without a label. However, following Collins, I propose that {A, {A, B}} be replaced with {A, B}. It is interesting to note that if we eliminated just the label of {A, {A, B}}, if we propose that a residue of ‘projection’ remained, i.e. if we replace {A, {A, B}} with {{A, B}} the specific problem posed above for the EL theory of subcategorization does not arise. (35) would be represented as in (40):

- (40) {{see, {{the, picture}}}}

Here *see* would derivationally c-command *the* and *picture* (given Epstein’s definition) since *the* and *picture* are both terms of {{the, picture}}. *The* and *picture* are terms since

each is indeed a member of a member of $\{\{\text{the, picture}\}\}$. The set $\{\{\text{the, picture}\}\}$ has the member $\{\text{the, picture}\}$, and *the* and *picture* are members of this member. So, we see that there is an empirical difference between eliminating just the label of a BPS object like $\{A, \{A, B\}\}$ and eliminating the label along with what has been referred to here as “projection.”

However, I will not pursue this option since (i) the added complexity of having (a form of) projection without labels is undesirable on conceptual grounds, and (ii) the further problems we address next are not solved under this type of analysis.

4.5 A solution to the EL subcategorization problem?

Assuming that Merge creates from the input A and B the output set $\{A, B\}$, note that there is a simple modification of derivational c-command, and more specifically of the definition of “term” that appears to solve the problem traced in section 4.3 above.

Let us maintain Epstein’s definition of derivational c-command, repeated below:

- (41) Derivational Definition of C-command (from Epstein 1999: 329):
X c-commands all and only the terms of the category Y with which X was paired (by Merge or by Move) in the course of the derivation.

But let us modify the definition of “term” as follows:

- (42) for any structure K,
i. K is a term of K
ii. the members of K are terms of K
iii. the members of the members of K are terms of K

We can now account for (35), $\{\text{see, \{\text{the, picture}\}}\}$. Here, *see* does derivationally c-command *the* (and *picture*). *The* is a term of $\{\text{the, picture}\}$ since *the* is a member of $\{\text{the, picture}\}$ (by case (42)ii). Thus, feature checking can take place between *see* and *the* and the subcategorization requirements of *see* are (correctly) satisfied.

4.6 Another problem for the EL theory of subcategorization

But, interestingly, there is another problem with (35). We noted above that in (35), *see* derivationally c-commands *picture* (under revisions (41)/(42)). Notice, moreover, that *picture* derivationally c-commands *the* (by virtue of the fact that *the* and *picture* are Merged). What this leads to, however, is a violation of EL’s version of Minimality, repeated below:

- (43) If X selects Y (where Y is a lexical category), then $*X Z Y$
where Z intervenes between X and Y, and Z is any lexical category.
(44) Z intervenes between X and Y if X c-commands Z, and Z c-commands Y.

Relative to (35), $\{\text{see, \{\text{the, picture}\}}\}$, *see* (=X) selects *the* (=Y), but there is a Z (=picture)

that intervenes between *see* and *the*. *See* c-commands *picture* and *picture* c-commands *the*; and *picture* is “any lexical category.” Thus Minimality is violated and (35) is incorrectly excluded, along with the desirably excluded *John saw [[of Fred] [the picture]]*.

Note that our reasoning for (35) is exactly parallel to EL’s reasoning (minus our explicit definition of c-command) for (45), modelled on EL’s example (21c) p. 52):

- (45) *the destroy cities

The selections a N (i.e. the subcategorization feature of *the* is satisfied by a category hosting the +N feature). However, *cities* in (48) can’t satisfy the subcategorization feature of *the* since *destroy* intervenes: *the* c-commands *destroy* and *destroy* c-commands *cities*. This is the correct result.

(45) illustrates two things. First, we need, under EL’s label-free theory of selection, the “intervention” clause (44). Minimality constrains subcategorization feature checking. Second, (45) illustrates that we want a general form of intervention for Minimality as Minimality relates to subcategorization; i.e. even though in (45) *destroy* does not Match (for the feature D) *the* and *cities*, *destroy* still counts as an intervener between *the* and *cities*--thus we apparently want (44) to be stated in terms of “any lexical category” (and not “a Matching feature”). As we will see in more detail below, this raises the added problem that there are really two kinds of “minimality;” one for subcategorization and one for Agree.

Note that EL explicitly considers an example like (46) (see Collins 2002:52 (21c)).

- (46) *the destroy a city

The argumentation here is the same as for (45): *destroy* intervenes between *the* and *city*. Looking at (46), we might propose a solution to the problem raised by (35), a solution along the following lines. Basically, we want *destroy* to intervene between *the* and *city* in (46), but we do not want *picture* to intervene between *see* and *the* in (35), {see, {the, picture}}. One way to get the distinction is to modify the definition of “intervene” in this way:

- (47) If X selects Y (where Y is a lexical category), then *X Z Y
where Z intervenes between X and Y, and Z is any lexical category.
(48) Z intervenes between X and Y if X ASYMMETRICALLY c-commands Z, and Z ASYMMETRICALLY c-commands Y.

The distinction between (46) and (35) now follows. Given our definition of Merge, (46) is represented as:

- (49) *{the, {destroy, {a, city}}}

Here, *the* asymmetrically (derivationally) c-commands *destroy* and *destroy* asymmetrically c-commands *city*. Thus, subcategorization feature checking between *the* and *city* is blocked by *destroy* since *destroy* is an intervener between *the* and *city*. That

is the correct result. Next, consider, yet again, (35) {see, {the, picture}}. In this case, *see* asymmetrically c-commands *the*, but *picture* does NOT asymmetrically c-command *the* (*the* and *picture* c-command each other). Thus, subcategorization feature checking between *see* and *the* is not blocked by *picture*. That is the correct result.

So far so good. But we still can't get the distinction between (35) and (45), repeated here,

- (45) *{the, {destroy, cities}}

In this case, *the* asymmetrically c-commands *destroy*, but *destroy* does NOT asymmetrically c-command *cities*; *destroy* and *cities* c-command each other. Thus, *destroy* would NOT intervene between *the* and *cities*, and subcategorization feature checking between *the* and *cities* would (incorrectly) occur.

Notice that a related problem arises for the EL treatment of *tell on*. EL argues that the subcategorization feature of *tell* is +*on* (thus, *tell* selects for a specific lexical category). In a structure like (50)

- (50) {tell {on Bill}}

EL argues that "This feature [i.e. the subcategorization feature of *tell*] is satisfied by the lexical item *on*, which is contained in the sister of *tell*." EL then claims that "Since no lexical category intervenes between *tell* and *on*, Minimality is satisfied" (EL: 50). But, I don't see how this last claim can be true. In fact, in (50), *Bill* IS a lexical category that intervenes between *tell* and *on*. *Tell* c-commands *Bill* and *Bill* c-commands *on*. Thus, *Bill* intervenes between *tell* and *on*, and the satisfaction of the subcategorization between *tell* and *on* is consequently (and incorrectly) blocked.

4.7 A more general statement of the problem with label-free subcategorization

4.7.1 A note on subcategorization-as-feature-checking with labels

EL attempts to subsume subcategorization under the more general feature checking system of Chomsky (2000, 2001). Subcategorization essentially becomes for EL an instance of the syntactic operation Agree, which, under the right conditions, deletes ("checks" in traditional terminology) certain features. The goal of EL is to subsume subcategorization under Agree, without appealing to labels or projection.

It was pointed out in the beginning of section 4 that labels make information that was introduced into the derivation at one point available again at a later point in the derivation. If we use graph-theoretic representations, we seem to see this (at least at first glance) in a pretty direct way. Assume, for the moment, Merge as defined in BPS (thus, Merge A & B produces {A, {A, B}}). Consider (51)

- (51)
- ```

 see
 /\
see the
 /\
the picture

```

The structure in (51) is an “informal representation” of the set  $\{see, \{see, \{the, \{the, picture\}\}\}\}$ . Given traditional interpretations of phrase markers, it might be tempting to think that in (51), the label *the* is the sister of *see*. It’s tempting to think, then, that *the* (more specifically, the feature +D that *the* contains) can check the subcategorization feature of *see* since *see* and *the* are “close enough” to each other; i.e. they are sisters. On this (erroneous) view, it seems as though the information contained in the lexical item *the* (its D feature) is made available twice: the first time is when *the* is Merged with *picture*; and then, it is made available later in the derivation, namely at the point in the derivation where  $\{the, \{the, picture\}\}$  is Merged with *see*.

In fact, however, we are being misled by the representation. The label *the* is not a sister to anything in (51). The sister of *see* is the entire set  $\{the, \{the, picture\}\}$ . What we actually have, in set-theoretic terms, is:

- (52)  $\{see, \{see, \{the, \{the, picture\}\}\}\}$

And with this, more accurate, set-theoretic representation, we find that the label *the* is clearly CONTAINED in the sister of *see*; i.e. it is contained within the category with which *see* is Merged, that category being  $\{the, \{the, picture\}\}$ . Still, in (52) the label *the* does seem to be closer to *see* than the lexical category *the* is to *see*. A concrete definition of “closeness,” for example, could be stated as follows:

- (53) A category X can have its subcategorization feature F checked by a Matching category Y iff Y is a member of the (set which constitutes the) sister of X. (Note also that X can have its feature F checked by Y if X and Y are sisters – and X, Y Match.)

By (53), *see* in (52) can have its subcategorization feature checked by *the*; *see* and *the* Match for the feature (D in this case) and *the* (the host of the checking feature) is a member of the category with which *see* is Merged (whereas the lexical item *the* is not a member of the set which is the sister of *see*; thus *the* is closer to *see* than *the* is to *see*).

But there is a fundamental problem with this type of analysis of subcategorization-as-feature-checking-with labels. The problem is that the label is not a term, and therefore it can’t participate in syntactic operations since the label will not derivationally c-command nor be c-commanded by any category (we will explore this point in a somewhat different form in just a moment). My point is that even with labels, the attempt to subsume subcategorization under the more general feature checking operation seems problematic. With labels, we would have to abandon the idea that derivational c-command is a necessary condition for syntactic operations. Or else we’d have to redefine “term” such that labels are terms. But each of these moves is problem-

atic (see below for further elaboration); and furthermore, the proposed analysis uses labels, which we seek to eliminate.

As a final comment, note that BPS seems to assume that subcategorization can be done more or less in the traditional way. Thus, we say that *see* subcategorizes for a DP. However, the notion “DP” in BPS has content only by the convention that a set whose label is a D qualifies as a DP. It is in this sense that the information of the label is made available later in the derivation. Thus, in {...*see*, {*the*, {*the*, *picture*} }} we say that {*the*, {*the*, *picture*} } is a DP by the stipulation that a set whose label is a D counts as a DP. We take up this matter again in section 4.8 below.

#### 4.7.2 Subcategorization-as-feature-checking without labels

Without labels, we basically want a selector (i.e. the subcategorization feature of) *X* to ‘look inside’ the set that *X* is merged with to Probe for a Matching feature (that can check the subcategorization feature of *X*). We don’t want *X* to look too deeply into the set which is its sister. But characterizing ‘how deep to look,’ which is essentially what EL’s Minimality condition does, is difficult. The general problem is illustrated with (54) vs. (55)

(54) *see* {*the*, *picture*}

(55) \**the* {*destroy*, *it*}

We want *see* to look into its sister and Match (and “check”) with *the* in (54). But, in (55) we don’t want *the* to be able to look into its sister and Match (and “check”) with *it*. Since sets abstract away from linear order, the problem is that the relation between *see* and *the* in (54) is exactly parallel to the relation between *the* and *it* in (55). It is not obvious how any definition of the Intervention clause of the Minimality condition can do this, at least not in a natural way; i.e. in a way consistent with our basic assumptions here. What is clear is that the Minimality condition proposed in EL does not yield the required distinction between (54) and (55).

### 4.8 More on the nature of labels

The above problem with subcategorization-as-feature checking without labels does help to reveal the potential empirical value (at least in principle) of constituent structure representation WITH labels. It may help answer the question: If labels are not “functioning elements,” then why are they proposed in BPS in the first place? Or, in other words, why are there labels, and why is there projection?

WITH labels, (54) and (55) would be represented as (54’) and (55’) respectively,

(54’) *see* {*the*, {*the*, *picture*} }

(55’) \**the* {*destroy*, {*destroy*, *it*} }

Suppose that the subcategorization feature of *X* can be checked only by a *Y* which is

the sister of X, or by a Y<sup>10</sup> which is the label of the sister of X. The idea here is that the subcategorization feature of X can only probe as far as its sister or the label of its sister to find a Matching “checker.” If it doesn’t find a Matching checker in that (very) limited domain, then all bets are off; feature checking between X and Y fails. In addition, if, following Chomsky (2000), we assume that if A selects B, and A and B are Merged, then A projects; then we can account for (54)’ vs. (55)’. In (54)’ *see* can have its subcategorization feature checked by (the Matching features of) *the*, since *the* is the label of the sister of *see*. In (55)’, *the* as a “probe,” seeks to have its subcategorization feature checked. It can look to its sister for a Matching element; but its sister is the SET {*destroy*, (destroy, it)} and this set itself does not have Matching features (although the members of this set do have features). So, *the* looks to the label of its sister, the only other option available to it. But the label (i.e. *destroy*) does not (or at least could be argued not to) have Matching features (the label *destroy* does not have the Matching +N feature).<sup>11</sup> There is no other option for the feature checking of *the* (the “checker” of the subcategorization feature of X must be found in the sister of X or in the label of the sister of X – after that all bets are off.) Thus, (55)’ represents a subcategorization violation since the subcategorization feature of *the* can’t be checked (neither the sister of *the* nor the label of the sister has a Matching feature). Notice what the label is doing on this view of subcategorization as feature checking. In the structure {...X, {A, {A, B}}}, the label is basically indicating which of the members of the set that is the sister of X can count as the potential checker of X. (And this serves the function of the Minimality condition in the system without labels.)

But although the system sketched above accounts for the distinction between (54) and (55), a distinction that is problematic for the system of subcategorization-as-feature-checking without labels, we run into the problem that labels are not terms and hence can’t participate in syntactic relations in the first place. For BPS labels are not terms and all and only terms are “functioning elements.” We could propose that labels are fully functional elements. But this proposal would face a number of difficult questions. If the label is a fully functioning element, then why is it never pronounced? Why does the label itself not move? But even if such questions could be satisfactorily answered, we’d still have the problems with labels raised in section 3.1, specifically, labels are redundant with lexical categories, and labels seem to violate inclusiveness.

Is there a way of doing the work of labels in the above cases without explicit appeal to labels? According to Chomsky (2000), when A and B are Merged, the “projector” is the selector. Thus, A projects (and its copy becomes the label) if A selects B.<sup>12</sup> Note that it is this property (i.e. this stipulation) of the theory of projection that (ultimately) allows us to distinguish (54)’ and (55)’. In (55)’, *the* is required by the theory to look only at the label of its sister for a possible checker; thus, *destroy* is the only potential checker; but it turns out not to be an actual checker (since it doesn’t have the right feature). It is crucial in (55)’ that *destroy* projects and not *it* (since if *it* projected, then the label *it* could check the subcategorization feature of *the*). But *destroy* projects only because of the stipulation that if A and B Merge, it is the selector that projects. We can get the same results without labels in the following way. Suppose A and B Merge to produce the simple set {A, B}. Suppose A is the selector of B. Suppose that C is

Merged with {A, B} to produce {C, {A, B}}. Assume next that C can subcategorization-feature-check with the member of its sister whose selector was itself checked. Thus, we can Merge *the* and *picture* to produce {the, picture}, and note that *the* selects *picture*. Now we Merge *see* with {the, picture} to produce {see, {the, picture}}. *See* can “check” with *the* (by hypothesis) since *the*’s selectors were checked at the point when *the* was Merged with *picture*. This gets the effect of labels. But note that we are appealing to an earlier point in the derivation. We have, in essence, a “look back” mechanism which gives us the crucial information about what happened earlier. That is, at the point in the derivation where *see* is Merged with {the, picture}, we need the information that at the earlier point in the derivation where *the* was Merged with *picture*, it was *the* that selected *picture*, and not the other way around. Here again, we see that labels serve the function of making information that was “used” at one point in the derivation, available at a later point in the derivation. Labels are a “look back” mechanism.

Note, finally, that on this view, there is an interesting parallel between labels-as-copies and a moved element and its copy (i.e. trace). Consider the movement of a category X from position P1 to position P2 (under copy theory). In the case of movement, certain information contained in X (eg its semantic information) is available at its original Merge site (a *wh*-word checking a theta feature, for example); and other information of X (eg its phonetic information) is available (i.e. overtly expressed) at its movement (landing) site. Information is made available at different points in the derivation. A label is similar to a moved element in this sense. The subcategorization feature of *the*, for example, is available at the point when *the* is Merged with *picture*. After the label *the* is created to produce {*the*, {the, picture}} (and note that the label is a copy just as a moved element is a copy), the label *the* makes the feature +D of *the* available later in the derivation, at the point, for example, where *see* is Merged with {*the*, {the, picture}}. Thus, *the* has its subcategorization feature checked by *picture*. And then *the* checks the subcategorization feature of *see*.

## A summary so far

To summarize, in section 2 it was deduced that labels are syntactically inert. The inertness of labels follows from (i) the BPS definition of Merge; (ii) derivational c-command; and (iii) the derivational theory of syntactic relations, specifically the idea that derivational c-command is a necessary condition for the application of syntactic operations. Labels are not terms. Therefore labels do not derivationally c-command any other category, nor are labels c-commanded by any other category. Labels are consequently inert.

Although labels are syntactically inert on the above set of (well-motivated) hypotheses, labels still “exist,” in that a label is a member of the set which constitutes a phrase in BPS. In section 3, however, it was argued that the “existence” of labels and projection is undesirable. The conclusion that labels can and should be eliminated from phrasal representations, I share with EL. However, the argumentation given in section 3 for this conclusion is rather different than EL. I argued in section 3 that a simplifica-



tion of Merge (Merge A and B produces just {A, B}, not {A, {A, B}}) is motivated on Minimalist grounds. And it was demonstrated that this simplification of Merge results in the elimination of labels and projection, as labels and projection are defined in BPS. EL does not consider the implications of the elimination of labels for Merge. EL argues that labels should be eliminated from the representation of phrases, but EL does not address in any detail the derivational operation, namely Merge, that produces these representations. I “start” with this derivational operation and argue that in its simplest form, Merge of A and B creates a relation between A and B, and nothing more. The absence of labels and projections immediately follows. The proposed simplification of Merge, and the consequent elimination of labels and projection, has implications for various syntactic operations and principles. Although the argumentation is quite different, EL and this paper share the conclusion that there are no labels (nor projection), and we must address the issue of how syntactic principles and operations that traditionally appeal to labels are to be stated without labels.

Section 4 focused on the implications of the elimination of labels for the relation “c-command.” C-command plays a fundamental role in the label-free syntax program initiated by EL. However, EL does not present an explicit definition of c-command, nor are the implications of label-lessness for c-command considered. I argued in section 4 that a label-free syntax is not (obviously) compatible with the standard representational definition of c-command. However, it is compatible with Epstein’s (1999) derivational definition of c-command. Equipped with this derivational definition, section 4 considered EL’s theory of subcategorization, and it was found that certain modifications of the derivational definition of c-command, more specifically in the definition of “term,” are apparently required. Certain further problems for the resulting theory of subcategorization were then presented, and possible solutions were sketched.

## 5. Subcategorization-as-feature-checking and the Locus Principle

### 5.1 On the Locus Principle

In deriving certain properties of X’-theory in a label-free syntax, EL makes crucial use of a version of a condition on lexical access (from Chomsky 2000), a condition that EL calls “the Locus Principle:”

- (59) “Let X be a lexical item that has one or more probe/selectors. Suppose X is chosen from the lexical array and introduced into the derivation. Then the probe/selectors of X must be satisfied before any new unsaturated lexical items are chosen from the lexical array. Let us call X the locus of the derivation.” EL: 46.

One property of X’-theory that EL derives with the Locus Principle is this:

- (60) Complements and Specifiers are Maximal Projections.

That the complement Y of a head X must be maximal follows in that if Y is not maximal, i.e. if Y is a head or an X', then the Locus Principle will be violated; similarly for specifiers. To illustrate this in more detail, note that it is a property of X'-theory that, for example, [<sub>CP</sub> Comp Infl'] is illicit. EL derives this from (60) as follows: Suppose we build up, through a sequence of Merges, the object

(61) [will [John sleep]]

i.e. we first Merge *John* and *sleep* (which satisfies the subcategorization feature and the theta-role feature of *sleep*); we then Merge [John sleep] with INFL (which is *will*) to produce (61). Note that the Merge of *will* and [John sleep] results in the satisfaction (i.e. the checking) of the subcategorization feature of *will*. Suppose that we now (try to) choose the COMP *that* from the lexical array to produce [<sub>CP</sub> Comp Infl'], i.e. to produce:

(62) [that [will [John sleep]]]

The problem is that in (62), although the subcategorization feature of *will* is satisfied, the EPP of *will* (= INFL) is not satisfied. *Will* (= INFL) is the Locus as *will* is still unsaturated (i.e. it has unchecked probes/selectors) at this point. *That* is a lexical item which is unsaturated in that its subcategorization feature is as yet unchecked. Thus, at point (61) the Locus Principle prohibits choosing *that* from the lexical array. (62) is consequently disallowed.

What I'd like to point out here is that the Locus Principle seems to provide a ready solution to the specific empirical problems with the EL theory of subcategorization that we raised in section 4.

## 5.2 Solving problems with EL subcategorization with the Locus Principle

In section 4 a simplified version of Merge was considered, and the definition of derivational c-command was adopted; relevant definitions are repeated below:

(63) Algorithm for Merge of A, B: Create the set {A, B}

(64) Derivational Definition of C-command (from Epstein (1999):  
X c-commands all and only the terms of the category Y with which X was paired (by Merge or by Move) in the course of the derivation.

(65) for any structure K,  
i. K is a term of K  
ii. if L is a term of K, then the members of the members of L are terms of K  
From Chomsky (1995)

It was argued that (63) was motivated on Minimalist grounds, and (63) results in the elimination of labels and projection. Furthermore, it was argued that a derivational definition of c-command is (arguably) required in a label-free syntax.

However, in sections 4.3 and 4.6, we pointed out problems for the EL theory of

subcategorization, problems that involve c-command and Minimality. EL's theory of subcategorization crucially appeals to c-command, but c-command is not explicitly defined in EL. (64) represents an explicit definition of c-command that is compatible with the label-free program. But we were not able to account for certain instances of subcategorization phenomena. Problematic examples are repeated below:

(66) {see, {the, picture}}

(67) \*{the, {destroy, cities}}

(68) \*{the, {destroy, {a, city}}}

Recall that we want *see* and *the* to participate in subcategorization feature checking in (66), but we don't want *the* and *city/cities* to participate in feature checking in (67) and (68). The problem, however, is that if we account for (67) and (68) by claiming that *destroy* intervenes between *the* and *cities/city*, it is not clear how we "stop" *picture* from intervening between *see* and *the* in (66).

What I'd like to point out here is that these examples seem to be accounted for by the Locus Principle, without any explicit appeal to Minimality.

Consider (67), under the following derivation.

- (69) a. Choose *destroy* from the lexical array.  
 b. Choose *cities* from the lexical array.  
 c. Merge *destroy* and *cities* to produce {destroy, cities}  
 Satisfying the subcategorization feature of *destroy*.  
 d. (Try to) choose *the* from the lexical array

Step "d" violates the Locus Principle in that the Locus *destroy* in step "c" is not saturated; and it is not saturated by virtue of the fact that it still has an undischarged theta role (its "external" theta role, to use standard terminology). We assume that the Merger of *destroy* and *cities* results in the checking of the subcategorization feature of *destroy*, and this Merger results in the checking of the internal theta-role of *destroy*; assume that both the subcategorization and the internal theta role features of *destroy* are checked by *cities* under sisterhood. But, the lexical item *the* is also unsaturated since it has an unchecked subcategorization feature. Thus, by the Locus Principle, step "d" in (69) is illicit. We can't choose a new unsaturated lexical item from the lexical array (i.e. we can't choose *the*) since the locus of the derivation up to that point, namely, *destroy*, is still unsaturated. Similar reasoning holds for (68).

Consider next (66). Here we Merge *the* and *picture* to give {the, picture}, and thereby satisfy the subcategorization feature of *the*. Note that {the, picture} is saturated – it contains no unsatisfied Probes/Selectors.<sup>13</sup> We are thus free to choose *see* from the lexical array and Merge *see* with {the, picture} and thereby satisfy the subcategorization feature of *see*. Note then that for these cases the locality condition on Minimality (i.e. the intervention condition) appears to be derived from the Locus Principle.

In order to account for certain instances of the Dutch partitive construction, the

details of which I will not review here, EL (tentatively) proposes the following revision of Minimality:

- (70) If X selects Y (where Y is a lexical category), then \*X Z Y
- a. where Z intervenes between X and Y, and
  - b. where Z is any lexical category and
  - c. where Z contains a probe/selector

Note that (70) could be modified to deal with the English cases above; i.e. (66), (67), and (68). But it should be noted that (70c) is really a restatement of the Locus Principle. If Z, which contains a probe/selector, is present in the derivation, then, because it HAS a probe/selector, it will be unsaturated. Thus, the Locus Principle prohibits choosing X from the lexical array, since X has a selector and hence is ALSO unsaturated. In light of this overlap with the Locus Principle, (70c) would be a curious addition to the grammar. Moreover, (70c) does not deal with the case to which we now turn.

### 5.3 A problem with EL subcategorization and the Locus Principle

Unfortunately, not all subcategorization phenomena can be reduced to the Locus Principle. A locality condition on subcategorization-feature-checking is still apparently required. Consider (71)

- (71) \*{the<sup>1</sup>, {the<sup>2</sup>, picture}} (superscripts used only for ease of exposition).

In this case, we Merge *the*<sup>2</sup> and *picture*, producing the saturated constituent {the<sup>2</sup>, picture}; the constituent {the<sup>2</sup>, picture} is saturated assuming that *picture* checks the subcategorization feature of *the*<sup>2</sup> (checks it under sisterhood). At this point, the Locus Principle itself does not prohibit Merging *the*<sup>1</sup> with {the<sup>2</sup>, picture}, yielding (71). {the<sup>2</sup>, picture} is saturated, thus I'm free to choose *the*<sup>1</sup> from the lexical array. The question is: can *picture* in (71) now check the subcategorization feature of *the*<sup>1</sup>? If there were no Minimality condition on feature checking, then (71) would apparently be (incorrectly) allowed.

To summarize, the theory we are dealing with directly above includes:

- (72) a. Merge A & B produces {A, B} There are no labels nor projection.
- b. Derivational c-command is a necessary condition for the application of syntactic operations.
  - c. Subcategorization is (a type of) feature checking.
  - d. Y can "check" the subcategorization feature F of X iff X and Y Match for F, and
    - i. X and Y are sisters (i.e. X is Merged with Y), or
    - ii. Y is a member of the sister of X (Y is a member of the set with which X is Merged).

- e. The Locus Principle. The Probes/Selectors of X must be satisfied before any new unsaturated lexical item is introduced into the derivation.

We explored the hypothesis that the Locus Principle, (72)e, can take over the work of Minimality with respect to subcategorization feature checking. We have seen that relative to certain troublesome examples, namely,

- (66) {see, {the, picture}}  
 (67) \*{the, {destroy, cities}}  
 (68) \*{the, {destroy, {a, city}}}

the Locus Principle, more specifically, the theory outlined in (72), gives the right results. But the theory outlined in (72) does not account for examples like (71).

To put the matter in more abstract terms, note that when X and Y are Merged to produce {X, Y}, it follows from the theory in (72) that Y can “check” the subcategorization feature of X, assuming that X and Y Match. (Thus, *picture* can check the subcategorization feature of *see* in {see, pictures}).

In the configuration {X, {Y, Z}}, Y can “check” the subcategorization feature of X, since Y is a member of the sister of X, again assuming that Y and X Match (note that Z can check X as well). On the other hand, in {X, {Z, {Y, W}}}, Y cannot “check” the subcategorization feature of X, since Y is not a member of the sister of X (rather Y is a member of a member of sister of X).

To say that Y can check the feature of X only if Y is a sister of X or if Y is a member of the sister of X gets us a local relation between X and Y. So, the key examples to consider will have this form:

- (73) {X, {Y, Z}}

Now, if {Y, Z} is unsaturated, then the Locus Principle will rule out the Merger of {Y, Z} with X since X, but virtue of its unchecked subcategorization feature, will be unsaturated as well. This disallows (66), and the like. But if {Y, Z} is saturated then the Merger of X and {Y, Z} does not rule afoul of the Locus Principle itself. This (correctly) allows (66). But, it also (incorrectly) allows (71). (66) and (71) are repeated here:

- (66) {see, {the, picture}}  
 (71) \*{the<sup>1</sup>, {the<sup>2</sup>, picture}}

If we bring back in Minimality to rule out (71), then we would also incorrectly rule out (66). That is, if *the*<sup>2</sup> intervenes between *the*<sup>1</sup> and *picture* in (71), then *picture* should intervene between *see* and *the* in (66).

One technical solution to (71) would be to assume this ‘freezing principle’: If the feature(s) F of Y “check” the subcategorization features of X, then F is/are not available for further feature checking. Since the N feature of *picture* “checks” the subcategorization feature of *the*<sup>2</sup> at the point in the derivation where *the*<sup>2</sup> and *picture* are Merged, then these same features of *picture* are not available for checking *the*<sup>1</sup>. Since it is the

features of *the* (and not *picture*) that check the features of *see* in (66), the ‘freezing principle’ does not block the feature checking relation between *the* and *see* in (66). Note that ‘freezing principle’ is similar to a constraint in Chomsky (2000) according to which the case features of an N, once checked, can’t check a probe; in essence, once the case feature of an N are checked, the NP is ‘inactive’.

## 6. Further notes on the Locus Principle

In this section, a number of further issues with EL’s Locus Principle are considered.

### 6.1 Can there be more than one Locus in a derivation?

EL observes that there are similarities between a label and a locus. EL states:

- (74) “For example, if a word X with a probe/selector is merged with a constituent Y to form [X Y], then X is the label in a theory with labels and X is the locus in a theory without labels.” (EL: 48)

In BPS, as we pointed out above, there is the stipulation that if A has a selector (for example, a subcategorization feature) and A and B are Merged, then A projects; i.e. A is copied and the copy of A becomes the label of the derived constituent, {A, {A, B}}. This is similar to the Locus in that if A has a selector (and A and B are Merged), then A is the Locus. In both cases, elements that have unchecked probes/selectors play a ‘special’ role.

EL then claims that

- (75) “The major difference between a label and a locus is that there is only one locus in a derivation, while there are many labels; each constituent has a different label.” (EL: 48)

It is not clear that (75) is true. Rather, it is arguable that there are as many Loci in a derivation as there are lexical categories with unchecked probes/selectors. To illustrate, consider again the EL statement of the Locus Principle:

- (76) “Let X be a lexical item that has one or more probe/selectors. Suppose X is chosen from the lexical array and introduced into the derivation. Then the probe/selectors of X must be satisfied before any new unsaturated lexical items are chosen from the lexical array. Let us call X the locus of the derivation.” EL: 46

Suppose *the* is chosen from the lexical array. Then, since *the* has a selector (its subcategorization feature), then *the* is a Locus; by the Locus Principle, we must satisfy the subcategorization feature of *the* before any new unsaturated lexical item is chosen from the lexical array (thus, immediately after *the* is chosen from the lexical array, we can’t choose, say, *saw*). So, suppose we choose *picture* from the lexical array. Assuming that the (unchecked) Case feature of *picture* does not count as a probe/selector, the

choice of *picture* does not violate the Locus Principle. Thus, we can Merge *the* and *picture*, and thereby satisfy the subcategorization feature of *the*. Up to this point in the derivation, *the* is the Locus. Suppose next that we choose *saw* from the lexical array. This choice of *saw* does not violate the Locus Principle, since {*the*, *picture*} is saturated; i.e. there are no elements in the “workspace” that are unsaturated. Once we choose *saw*, then since *saw* has unchecked probe/selectors, then *saw* is the (new) Locus. We must, consequently, satisfy all the probe/selectors of *saw* before choosing any new unsaturated elements from the lexical array, which means that we first must Merge *saw* with {*the*, *picture*}. We can proceed in this way until a final saturated constituent (namely, a sentence) is generated. On this view, there will be as many Loci in the (whole) derivation as there are points in the derivation where we are allowed, by the Locus Principle, to choose a new unsaturated lexical item.

In fact, it is not clear that there could be only one Locus in a derivation. Suppose, for example, that we Merge *likes* and *it* to produce

(77) {likes, it}

We want *likes* to be a Locus here since we want the Locus Principle to prohibit choosing, say, *will* from the lexical array to produce \*{will, {likes, it}}. The Locus Principle forces the next move with (77) to be to Merge (77) with an N (or NP). Suppose we Merge (77), for example, with *Bill* to produce

(78) {Bill, {likes, it}}.

(78) is a saturated constituent since it contains no unchecked probes/selectors (there are unchecked Case features, but Case features, as we’ll argue in some detail below, do not count as probes/selectors for EL). As we’ve just seen, the Locus in producing (78) is the verb *likes*. After (78) is generated, then the probes/selectors of *likes* are checked and *likes* no longer counts as a Locus. Suppose that we now choose *will* from the lexical array to produce

(79) {will, {Bill, {likes, it}}}

Here, *will* is the new Locus. And *will* must be a Locus since we want to be sure not to Merge the object in (79) with, say, *that*. That *will* is a Locus is crucial for EL’s argument that it is possible to derive from the Locus Principle the fact the complements and specifiers are maximal projections. (See section 5 for further detail). Overall, then, on EL’s own reasoning, a derivation must include more than one Locus.

## 6.2 Case features are exempt from the Locus Principle

The Locus Principle, (76) above, is sensitive to probes and selectors in that a lexical item with “unchecked” probes or selectors is subject to the LP. What are the probes and selectors? The list would seem to include:

- (80) a. theta roles eg, an “unsatisfied” theta role of a V renders the V unsaturated  
 b. phi features of Infl  
 c. Case feature of Infl  
 d. EPP feature of Infl  
 e. subcategorization feature of any category

If an element X contains any one of the features in (80), and if the feature is unsatisfied (“unchecked,” “unassigned”), then X is unsaturated. And if X is unsaturated, then the Locus Principle comes directly into play. Thus, if a verb like *see* is introduced into the derivation, then since *see* is unsaturated by virtue of its unsatisfied theta role(s), then according to the LP the unsatisfied feature of *see* must be satisfied before any new unsaturated element is introduced into the derivation.

As far as I can tell, a theta feature (a theta role) and a subcategorization feature are considered “selectors” while the other features in (80) are “probes.” Another way that EL seems to state the distinction, see EL: 48, is that selectors require Merge, while probes require Agree for their satisfaction. But this distinction between selector and probe is not meaningful in the sense that the LP itself doesn’t care about the distinction. What the LP cares about is whether an element is unsaturated. The LP doesn’t care that an element X is unsaturated because it contains an unsatisfied theta role (a selector) or an unsatisfied EPP feature (a probe); it only cares that there is SOME feature that makes X unsaturated. It is in this sense that we could subsume the names “probe” and “selector” under the single label, like “unsaturators.” So for the LP, probes and selectors are equivalent (both are related to unsaturation).

But note that the (unchecked) Case feature on N is (crucially) NOT an unsaturator for N (the Case feature of N does not count as a probe or selector). Thus, suppose I choose *see* from the lexical array. Since *see* has unchecked probes/selectors, it is subject to the LP. To satisfy the subcategorization and theta features of *see*, something must (ultimately) be chosen from the lexical array; but what is chosen better not have probes/selectors since if it did have probes/selectors, the LP would be violated. In fact, after *see* is chosen from the lexical array, I can choose, say, *it* from the lexical array to produce {*see*, *it*}. So even though *it*, and nominals generally, have an unchecked Case feature, a feature which triggers Agree, *it* still counts as saturated for the LP. It is clear that Case must be exempt from the LP; if Case were not exempt from the LP, virtually nothing could be generated without violating the LP.

## Notes

\* Earlier versions of this paper were circulated beginning in 2000. For extensive written commentary and discussion, including very helpful clarifications and many suggestions for improvement, I’d like to thank Andrew Carnie and Samuel David Epstein (very special thanks



to Sam for his insightful discussion of many of the arguments of this paper). I'm particularly grateful to Chris Collins for the example of his work; and his generous and very helpful comments and suggestions. Many thanks to Cedric Boeckx for his interest in and support of this work. Of course, all faults are mine.

1. A type of label-free syntax is proposed by Dependency Theory; see Chametzky (2000), Hudson (1990).
2. All page references are to Collins (2002). See also Boeckx (2004) for extensive discussion of label-free syntax, and Chomsky (2005).
3. As Chris Collins (pc) points out there is a difference between eliminating labels and eliminating constituent structure. One can eliminate labels, but still define "first branching" node if there are still constituents. We'll return to this matter below.
4. For the set  $\{A, \{A, B\}\}$ , the label  $A$  is identified with  $A$  where  $A$  is a lexical item. If  $A$  is itself a phrase, then the label  $A$  is identified with the head of  $A$ ; thus the label  $A$  is always identified with a lexical item.
5. Chomsky (1995), (2000), and (2001) also uses copies for movement. Thus, in  $[\text{who}^1 \text{ did you see who}^2]$ , where *who* has moved from the position of  $\text{who}^2$  to the position of  $\text{who}^1$ ,  $\text{who}^1$  and  $\text{who}^2$  are "occurrences" of the same category. See Epstein & Seely (1999, 2006) and references therein for extensive discussion.
6. I am not proposing an explicit complexity metric with respect to which the claimed "simplicity" of the modified version of Merge can be measured. Thus, I use the phrase "simplification of Merge" with some caution.
7. The "copy" operation can be stated in various ways. But some notion of "copy" is needed. We can't say: create the set  $\{A, B\}$ ; then remove  $A$  from this set, giving  $\{B\}$ ; and then create a new set consisting of  $A$  and  $\{B\}$  – that would give  $\{A, \{B\}\}$ , it would not give  $\{A, \{A, B\}\}$ . A copy is thus required.
8. This seems an obvious point that does not require further justification; and EL itself claims that the labels of heads are not eliminated: "Note that I am not arguing against category labels like  $N, V, P, \text{Adj}$  for lexical categories." EL: 43.
9. Note that *the* and *picture* are terms of the object  $\{\text{see}, \{\text{the}, \text{picture}\}\}$ ; but this is irrelevant in the present context: *see* is not Merged with  $\{\text{see}, \{\text{the}, \text{picture}\}\}$ , rather *see* is Merged with just  $\{\text{the}, \text{picture}\}$ .
10.  $Y$  here is to be understood as the host of the features that Match and potentially check the subcategorization feature of  $X$ . Technically speaking, it is the features of lexical categories that participate in feature "checking."
11. The Probe-Goal analysis of Chomsky (2000, 2001) characterizes the relation Match between  $X$  and  $Y$  as having the same feature but not necessarily the same feature value. Thus the  $\phi$  features of INFL have "minus" value and the  $\phi$  features of an  $N$  have "plus" value, but INFL and  $N$  still Match. In (55)', we are assuming that the subcategorization feature of *the* is  $+N$ . The label of the sister of *the*, i.e. *destroy*, by virtue of bearing the feature  $-N$ , would Match according to Chomsky. Thus, we would have to require that subcategorization feature checking requires identity not just same feature but same value for the feature).
12. See Berwick and Epstein (1995) for comparison with Montague grammar.

13. Notice that {the, picture} (specifically *picture*) does have an unchecked Case feature. But the Case feature does not count as a probe/selector. Even though {the, picture} has an unchecked Case feature, it still counts as saturated. EL does not explicitly address this issue, but the logic of the matter seems pretty clear – see section 6 for further comment.

## References

- Berwick, R. and S.D. Epstein. 1995. On the convergence of ‘minimalist’ syntax and categorial grammar. In *Algebraic Methods in Language Processing 1995*, A. Nijholt, G. Scollo and R. Steetkamp (eds). Enschede: University of Twente.
- Boeckx, C. 2004. Bare syntax. Ms. Harvard.
- Chametzky, R. 2000. *Phrase Structure: From GB to minimalism*. Oxford: Blackwell.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2005. Three factors in language design. *Linguistic Inquiry* 36.1: 1–22.
- Collins, C. 2000. Eliminating labels. Ms. Cornell.
- Collins, C. 2002. Eliminating labels. In *Derivation and Explanation in the Minimalist Program*, S.D. Epstein and T.D. Seely (eds), 42–64. Oxford: Blackwell.
- Epstein, S.D. 1994. The derivation of syntactic relations. Ms, Harvard.
- Epstein, S.D. 1999. Un-principled syntax and the derivation of syntactic relations. In *Working Minimalism*, S.D. Epstein and N.Hornstein (eds), 317–345. Cambridge MA: The MIT Press.
- Epstein, S.D., E. Groat, R. Kawashima and H. Kitahara. 1998. *A Derivational Approach to Syntactic Relations*. Oxford: OUP.
- Epstein, S.D. and N. Hornstein (eds). 1999. *Working Minimalism*, Cambridge MA: The MIT Press.
- Epstein, S.D. and T.D. Seely. 2002. *Derivation and Explanation in the Minimalist Program*. Oxford: Blackwell.
- Epstein, S.D. and T.D. Seely. 2006. *Derivations in Minimalism*, Cambridge: CUP.
- Hudson, R. 1990. *English Word Grammar*. Oxford: Blackwell.



## PART III

### **Minimalist tools and empirical pay-offs**



# *He himself* and binding domains in a minimalist framework\*

Gerardo Fernández-Salgueiro and Michael R. Marlo  
University of Michigan

## Abstract

In this paper, we analyze the properties of the element *he himself*, which has to be coreferent with a non-local c-commanding antecedent, provided there is one in the sentence. These data were the subject of a brief controversy in *Linguistic Inquiry* in the late 1980s and early 1990s that has not received much attention since. We argue that the Minimalist Program offers interesting and unexplored ways of re-examining the phenomena, given the emphasis on the role of derivations in the grammar. In particular, we take *he himself* to be the result of the adjunction of *himself* to *he* at a certain point in the derivation. After presenting our analysis, we discuss the implications of this approach for a theory of Binding domains and the overall architecture of the Faculty of Language within the Minimalist Program.

## 1. Introduction

### 1.1 The controversy between Bickerton (1987) and McKay (1991)

Bickerton (1987) presents novel data, such as the example in (1), in which the complex element *he himself* is obligatorily coreferent with a non-local, c-commanding antecedent.<sup>1</sup> Bickerton reports that coreference is impossible with the non-c-commanding element *John* and with a discourse element. Bickerton claims that these facts emerge from unusual anaphoric properties of the lexical item *he himself*.

- (1) [John<sub>i</sub>'s father]<sub>j</sub> thinks that [he himself]<sub>\*i,j,\*k</sub> is smart.

In his response to Bickerton, McKay (1991: 369–370) claims that Bickerton's judgments are "incorrect", and that Bickerton was "misled" by not considering his examples with sufficient context. McKay presents examples similar to those from Bickerton, but with some additional discourse context. In contrast to Bickerton, McKay claims that with the appropriate context, *he himself* in a sentence like (2) can refer either to the non-c-commanding DP *John* or to a DP in the discourse.

- (2) Unlike his father, John has gotten excellent grades throughout his educational career and has excelled in every academic pursuit that he has ever attempted. [John<sub>i</sub>'s father]<sub>j</sub> thinks that [he himself]<sub>i, #j, #k</sub> is smart.

McKay argues that the coreference possibilities of *he himself* are determined pragmatically. *He himself* is therefore similar to the pronominal *he* in nominative case position.

In this paper, we argue that McKay was mistaken in characterizing Bickerton's judgments as "incorrect". For some speakers, even with extremely biased context, the possible antecedents for *he himself* seem to be restricted by the syntax. For example, the sentence in (3) shows that for some speakers, *he himself* can corefer only with the DP *John's father*, even though it is dispreferred pragmatically.

- (3) Unlike his father, John has gotten excellent grades throughout his educational career and has excelled in every academic pursuit that he has ever attempted. [John<sub>i</sub>'s father]<sub>j</sub> thinks that [he himself]<sub>\*i, #j, \*k</sub> is smart.

In our view, Bickerton and McKay present data from separate dialects (I-languages). In this paper, we would like to reconsider the facts from Bickerton's dialect and consider additional data as well. We also show that, under a derivational approach to syntax, the distribution and interpretation of *he himself* can be captured.<sup>2</sup> We will also discuss interesting implications of this analysis for the re-interpretation of Binding Theory principles in minimalism.

## 1.2 "Anaphoric" vs. "emphatic" himself

Before we present the core data in detail, we want to make it explicit what data we intend to account for in our analysis and what data we don't intend to account for. McKay claims that *himself* simply functions as an emphatic pronoun, as in (4) - (6) from Bickerton (1987: 345), where *himself* modifies a DP resulting in the meaning, 'DP<sub>i</sub>, and no one but DP<sub>i</sub>'.

- (4) John himself did it.  
 (5) I gave it to Bill himself.  
 (6) John gave it to Mary himself.

For the dialects under consideration, the "anaphoric" use of *himself* is distinct from the "emphatic" use of *himself* (Bickerton 1987: 345). At least some speakers of Bickerton's dialect with "anaphoric" *himself* also have an "emphatic" *himself*. In these dialects, the emphatic use seems to require a special intonation contour, which we will represent with small caps *HE HIMSELF*. For these speakers, *HE HIMSELF* has the same coreference properties as those reported for *he himself* in McKay's dialect and, therefore, as the pronominal *he*. With the appropriate context, Emphatic *HE HIMSELF* can be coreferent with a non-c-commanding antecedent that agrees in  $\phi$ -features or with an antecedent

that is not the closest c-commanding antecedent. For example, in (7) (cf. (2) and (3)), in which the context biases reference to *John*, *HE HIMSELF* can corefer with *John*.

- (7) Unlike his father, John has gotten excellent grades throughout his educational career and has excelled in every academic pursuit that he has ever attempted. [John<sub>i</sub>'s father]<sub>j</sub> thinks that [HE HIMSELF]<sub>i,#j,#k</sub> is smart.

McKay (1991:370) explicitly argues that "the examples considered here do not need special stress." Therefore, we conclude that we really are dealing with separate dialects. We also note that *he alone* has the same possible antecedents as "emphatic" *HE HIMSELF*, McKay's *he himself*, and the pronominal *he*, as shown in (8).

- (8) Unlike every other member of his family, John has gotten excellent grades throughout his educational career and has excelled in every academic pursuit that he has ever attempted. [John<sub>i</sub>'s father]<sub>j</sub> thinks that [he alone]<sub>i,#j,#k</sub> is smart.

In short, it appears that in the dialect under investigation there are two *he himself*s: one that is "anaphoric", and one that is "emphatic". In this paper, we will focus on the properties of the "anaphoric" *himself*, not on the "emphatic" *himself*.

## 2. The core data

As is well known, the sentence in (9) is ungrammatical because the anaphor *himself* must be locally bound (Condition A), but it is not. Therefore, anaphors, such as *himself*, are generally restricted from nominative case positions because they cannot have an antecedent that is local enough.<sup>3</sup>

- (9) \*John's father thinks that himself is smart.

The example in (10) shows that pronominals, such as *he*, must be locally free; they must corefer to non-local antecedents or discourse DPs.

- (10) [John<sub>i</sub>'s father]<sub>j</sub> likes him<sub>i,\*j,k</sub>.

The example in (11), repeated from (1), shows that anaphoric *he himself*, unlike *himself* in isolation, is licit in subject position of the embedded clause, and it must be coreferent with the, non-local c-commanding antecedent *John's father*. As Bickerton (1991) pointed out, *he himself* therefore seems to have hybrid properties of both pronominals and anaphors. On the one hand, *he himself* behaves as a pronoun in that it can appear in subject position, receiving an external theta role, checking Nominative Case, and coreferring with a non-local antecedent. On the other hand, *he himself* behaves as an anaphor since it is bound by a c-commanding antecedent. After discussing the relevant examples in detail in the following section, we will provide an analysis in section 4 that attempts to deduce these hybrid properties from independent principles of the grammar.



- (11) [John<sub>i</sub>'s father]<sub>j</sub> thinks that [he himself]<sub>\*i,j,\*k</sub> is smart.

An interesting property of *he himself* is that it can “skip over” a c-commanding antecedent if it disagrees in  $\phi$ -features to corefer with a “higher” c-commanding antecedent that does agree in  $\phi$ -features. Example (12) shows that the closest c-commanding antecedent *Mary* disagrees in gender with *he himself*. However, the higher c-commanding antecedent *John's father* agrees in its  $\phi$ -features with *he himself*. Coreference is possible only between *he himself* and *John's father*. As we saw before, *he himself* cannot corefer with the non-c-commanding antecedent *John*.

- (12) [John<sub>i</sub>'s father]<sub>j</sub> said that [Mary]<sub>k</sub> believes that [he himself]<sub>\*i,j,\*k,\*1</sub> is smart.

Although *he himself* can skip over a c-commanding antecedent that disagrees in  $\phi$ -features to corefer with a higher c-commanding antecedent that does agree in  $\phi$ -features, a c-commanding antecedent that agrees in  $\phi$ -features with *he himself* cannot be skipped. As shown by (13), coreference is only possible between *he himself* and the closest matching c-commanding antecedent *Bill's brother*. The examples in (12) and (13) show that coreference is established between *he himself* and the closest c-commanding antecedent that agrees in  $\phi$ -features.

- (13) [John<sub>m</sub>'s father]<sub>n</sub> said that [Bill<sub>i</sub>'s brother]<sub>j</sub> believes that [he himself]<sub>\*i,j,\*k,\*m,\*n</sub> is smart.

As expected, given the syntactic conditions that regulate the interpretation of *he himself*, similar effects emerge when a wh-element is extracted from a subject position that c-commands *he himself*. As shown in (14), when the wh-element matches *he himself* in its  $\phi$ -features, the wh-element is coreferent with *he himself*. In terms of overt elements, *Bill* is the closest matching c-commanding antecedent. However, in this example, coreference can occur only between *he himself* and the wh-element; coreference with *Bill* is blocked. Note, though, that the wh-trace is the closest c-commanding antecedent of *he himself*.

- (14) Who<sub>i</sub> did Bill<sub>j</sub> say t<sub>i</sub> believes that [he himself]<sub>\*i,\*j</sub> is smart?

The sentence in (15) shows what happens when the wh-element and wh-trace disagree with *he himself* in  $\phi$ -features. As expected, the disagreeing wh-trace is skipped, and *he himself* corefers with the closest matching c-commanding antecedent, *Bill*.

- (15) [What girl]<sub>i</sub> did Bill<sub>j</sub> say t<sub>i</sub> believes that [he himself]<sub>\*i,j</sub> is smart?

Given that *he himself* can refer only to the closest matching c-commanding antecedent, an interesting property of *he himself* emerges in its interaction with quantifiers. For comparison, consider the example in (16), in which the quantifier *everyone* is the subject of the matrix clause, while the pronominal *he* is the subject of the embedded clause. As is well known (e.g., Webelhuth 1995), the pronominal *he* can either be bound by the subject of the matrix clause or refer to a discourse DP. As a result, there are two possible interpretations of the sentence in (16). In one reading, in which *he*

is bound by a discourse DP, there is one person who everyone thinks is smart. In the other reading, in which *he* refers to the subject of the matrix clause, *everyone*, the interpretation is that for each person X, X thinks that X is smart.

- (16) Everyone<sub>i</sub> thinks that he<sub>i,j</sub> is smart.

As we noted above, the possible antecedents of *he himself* are more restricted than those of the pronominal *he*. Whereas the pronominal *he* can be bound by an antecedent within the same sentence or refer to a discourse DP, *he himself* can be bound only by the subject of the matrix clause, *everyone*. Therefore, there is only one possible interpretation of the sentence in (17): for each person X, X thinks that X is smart.

- (17) Everyone<sub>i</sub> thinks that [he himself]<sub>i,\*j</sub> is smart.

### 3. Discourse reference

In the previous section, we established that *he himself* corefers with the closest c-commanding antecedent that matches its  $\phi$ -features. The whole picture is somewhat more complicated in that in the absence of a c-commanding antecedent, coreference can be established between *he himself* and a discourse referent or between *he himself* and a non-c-commanding antecedent. For example, the sentence in (19), based on Bickerton's (1987:347) example in (18), has no-c-commanding antecedents. Nevertheless, there are two non-c-commanding antecedents, *Mary* and *Susan*, either of which can corefer with *she herself*.

- (18) The essays that Mary<sub>i</sub> wrote were things that [she herself]<sub>i</sub> attached little importance to.
- (19) The essays that Mary<sub>i</sub> wrote to Susan<sub>j</sub> were things that [she herself]<sub>i,j</sub> attached little importance to.

In addition, Bickerton (1987:346) gives examples, such as the one in (20), in which there is no antecedent c-commanding *she herself*. As a result, *she herself* can corefer with the discourse DP *Mary*.

- (20) A: How will Mary<sub>i</sub> do in the exam?  
B: I don't know, but [she herself]<sub>i</sub> says she'll pass.

In these examples involving *he himself* and no matching c-commanding antecedent, syntactic factors cannot determine coreference. As McKay argues, it is reasonable for us to admit that coreference is determined pragmatically. It is important to keep in mind, however, that "The presence of a c-commanding antecedent guarantees that *he himself* will not corefer with a non-c-commanding antecedent even in the same sentence (Bickerton 1987:346)." Similarly, discourse reference is possible only when there is no c-commanding antecedent that agrees in  $\phi$ -features (Bickerton 1987:346). As shown in (21), which parallels (20) but adds a c-commanding antecedent, corefer-

ence between *she herself* and the discourse entity is impossible; *she herself* can corefer only with the matching c-commanding antecedent.

- (21) A: How will Mary<sub>i</sub> do in the exam?  
 B: I don't know, but Susan<sub>j</sub> says that [*she herself*]<sub>\*i,j</sub> will pass.

#### 4. Analysis

As pointed out in the introduction, the complex element *he himself* has properties of both pronouns and anaphors. One possible analysis is that *he himself* is a lexical item with idiosyncratic properties, such as being able to be bound by a c-commanding antecedent outside a local domain (roughly Bickerton's approach). Alternatively, as we argue, the properties of *he himself* may follow from more general properties of the grammar.

Before we present our analysis, we would like to show that anaphoric elements can be bound outside their CP. Consider (9) again, repeated here as (22):

- (22) \**[John<sub>i</sub>'s father] thinks that himself is smart.*

There are two reasons why this sentence is ungrammatical. First, *himself* is an accusative case DP in Spec-TP, which leads to a crash at LF because the Case-F on the DP and the  $\phi$ -Fs on Tense have not been checked/deleted. Second, *himself* is an anaphor, and as such, requires an antecedent in its local binding domain. Imagine that English happened to have a nominative version of *himself*, something like *heself*. Would the sentence still be ungrammatical because of a binding theory violation? Consider (23) and (24) (discussed in Williams (1994)):

- (23) *[John and Mary]<sub>i</sub> think that [each other]<sub>i,\*j</sub> is/are smart.*  
 (24) *Mary<sub>i</sub> said [her own]<sub>i,\*j</sub> mother would do it.*

In these examples, *each other* and *her own* are bound by an antecedent that is outside their local domain, which means that binding theory also has to aim at explaining binding properties outside a local domain. It seems reasonable to suggest, then, that (22) above is ungrammatical because of Case.<sup>4</sup> Its ungrammaticality reflects a gap in the English anaphor paradigm, which has nominative, accusative, and possessive reciprocals, and accusative and possessive reflexives, but no nominative reflexive. Bickerton suggested that *he himself* is the lexical item that fills this gap in the paradigm. However, although it is clear *he himself* can be bound outside its CP just like *each other* and *her own* in (23) and (24) above, we argue here that its properties are different.

We propose that *he himself* is not a lexical item but actually a complex form resulting from a syntactic adjunction operation that adjoins *himself* to *he* at a certain point in the syntactic derivation. To be more precise, we propose that adjoining *himself* to *he* restricts the range of referents that *he* alone would have. Consider (25), for example:

- (25) John<sub>i</sub> said that he<sub>i,j</sub> is smart.

*He* can refer to any male person, including *John*, given that it has the feature [+pron]. After these binding possibilities are evaluated, *himself* is acyclically adjoined to *he* and adds to it the property that it has to be bound by a matching c-commanding antecedent.<sup>5</sup> For this sentence, the only matching c-commanding antecedent is *John*. As *John* is the only antecedent compatible with both *he* and *himself*, obligatory co-reference occurs.

Before we show the details of how this obligatory coreference takes place, let's motivate an adjunction analysis. Minimalist notions like Checking theory and Full Interpretation force us to assume this is an adjunction operation. If it were not so, *himself*, as a DP with accusative case, would need to check its Case-Fs; otherwise, the derivation would crash at LF, since Full Interpretation requires that only interpretable Features remain in the LF representation. However, the accusative Case Feature of *himself* cannot be checked in the same domain as the nominative subject. The way out of this problem is to say that *himself* is adjoined to *he*, since there is evidence that adjuncts, even when they are DPs, do not have to check any Case-Fs, as the examples in (26) and (27) show:

- (26) I saw the movie [the other day].

- (27) He wrote the paper [three times].

We show now how obligatory coreference occurs between *he himself* and *John's father* in a sentence like (1) (repeated here as (28)):

- (28) [John<sub>i</sub>'s father]<sub>j</sub> thinks that [he himself]<sub>\*i,j,\*k</sub> is smart.

For this sentence, the expression in (29) would be generated (without *himself*):

- (29) John's father thinks that he is smart.

At this point, principle B of Binding Theory is evaluated, and the following coreference possibilities are rendered grammatical:

- (30) [John<sub>i</sub>'s father]<sub>j</sub> thinks that he<sub>i,j,k</sub> is smart.

Now *himself* acyclically adjoins to *he* creating the following object in Spec-TP:

- (31)
- $$\begin{array}{c} \text{he}_{i,j,k} (= \{ \langle \underline{\text{he}}, \underline{\text{he}} \rangle, \{ \text{he}, \text{himself} \} \}) \\ \swarrow \quad \searrow \\ \text{he}_{i,j,k} \quad \text{himself} \end{array}$$

Now *himself* has to look for the closest c-commanding antecedent in order to become bound. As *himself* adjoins to *he*, *he* does not c-command *himself* (only one of the segments of *he* does), so *himself* cannot get its reference from *he*. Instead, *himself* gets bound by *John's father*, which is the closest c-commanding antecedent, as illustrated in (32):

- (32) [John<sub>i</sub>'s father]<sub>j</sub> ... [he<sub>i,j,k</sub> [himself<sub>j</sub>]]

If we make the assumption that *he* and *himself* have to have the same index here, it follows that the complex *he himself* must also have the index (j) and take *John's father* as its antecedent, since it is the only index shared by both *he* and *himself*. This assumption also holds in the case of "emphatic" *HE HIMSELF* (cf. \*John<sub>i</sub> said that HE<sub>i</sub> HIMSELF<sub>j</sub> did it).

The idea that the adjunction of *himself* restricts the range of possible referents for the pronoun might also provide us with an explanation of why (33) and (34) below are somewhat degraded, under the anaphoric interpretation (see section 1.2):

- (33) ?\*I think that [I myself] am smart.  
 (34) ?\*You think that [you yourself] are smart.

In these examples the reference of the pronouns *I* and *you* is already unique, speaker and hearer, respectively. Therefore, insertion of *myself* and *yourself* cannot restrict the reference of the pronoun in the same way that *himself* does for *he* in (28).<sup>6</sup>

## 5. Theoretical implications of our analysis

The analysis that we have just presented assumes two stages in the process of (co)reference assignment. First, the coreference possibilities for the elements that were cyclically inserted in the derivation are evaluated according to Binding Theory principles A, B and C. For the elements that were acyclically inserted, other principles apply, as we will show. Empirical evidence supporting this idea comes from examples like (35) and (36):

- (35) John<sub>i</sub> took a picture of him<sub>?i</sub>/himself<sub>i</sub>.  
 (36) John<sub>i</sub> read a book about him<sub>i</sub>/himself<sub>i</sub>.

In (35), only *himself* can refer to *John*, because it is part of a complement. Presumably, this relation is the result of the operation Merge (picture, {of, {of, himself}}). Both the pronoun and the anaphor are possible, however, when they are part of an adjunct, as in (36). This means that Binding Theory as formulated does not readily extend to make predictions about pronouns or reflexives inserted by adjunction, or contained in a syntactic category that is inserted by adjunction.

The question arises, then, of what regulates (co)reference assignment for adjuncts inserted acyclically; that is, what syntactic relation(s) is/are relevant at this second stage? There must be another set of Binding principles regulating coreference assignment for these anaphoric and pronominal elements inserted acyclically. In (36), for example, *him*, apart from referring to *John*, could refer to any other DP in the discourse or to a higher DP with agreeing (masculine/singular) Features if there were one. *Himself*, however, can refer only to *John* in this sentence.

Returning now to the phenomenon we are exploring, *he himself* does not behave in the same way as a regular anaphor does. First, it follows from Principle A that a regular anaphor (i.e., an anaphor inserted cyclically in the derivation) cannot be bound by a DP if there is another DP that is closer. If the anaphor and the closest DP do not match, then the result is an ungrammatical sentence. Conversely, the *he himself* complex is bound by the closest matching antecedent. In other words, there is an intervention effect for anaphors that are cyclically inserted in the derivation that disappears later on. Whereas the notion of “closest search” is relevant for Binding Theory during the syntactic derivation, the notion “closest *matching* search” is critical at this second stage. Examples (37) and (38) illustrate this contrast very clearly:

- (37) \*[John and Mary]<sub>i</sub> think that Bill<sub>j</sub> believes that [each other]<sub>i,j</sub> is/are smart.  
(cf. (23) John and Mary think that each other is/are smart.)

- (38) [John and Mary]<sub>i</sub> think that Bill<sub>j</sub> believes that [they themselves]<sub>i,\*j</sub> are smart.

Second, a regular anaphor must always be bound. If there is no feature matching between the anaphor and its antecedent, the sentence is ungrammatical. In the case of *he himself*, if a suitable antecedent is not found, it can refer to a discourse DP. Examples (39) and (40) illustrate this. These sentences are intended to be the answer to the question, “*How will Mary do in her exam?*”

- (39) \*I don’t know, but herself says she will pass.

- (40) I don’t know, but [she herself] says she will pass.

## 6. *He himself* in non-subject positions?

Bickerton (1987: 347) argues that “*he himself* is confined to positions that are nominatively Case-marked.” However, some speakers accept sentences like the ones in (41), where the anaphor is adjoined to an object (accusative), and (42), where the anaphor is adjoined to the object of a preposition (oblique), although they are a bit marginal, perhaps because the pronoun and the first syllable of the reflexive are phonologically identical (Baker 1995):

- (41) [Mary<sub>i</sub>’s daughter]<sub>j</sub> thinks that Sally likes [her herself]<sub>\*i,\*j</sub>.

- (42) [John<sub>i</sub>’s father]<sub>j</sub> believes that Bill was thinking about [him himself]<sub>\*i,\*j</sub>.

However, in Spanish (where the pronoun and the reflexive are phonologically distinct), this is perfectly possible:

- (43) María<sub>i</sub> piensa que Luisa<sub>j</sub> se lo dio a ella<sub>i,\*j,k</sub>.  
Mary thinks that Luisa her it gave to her  
‘Mary thinks that Luisa gave it to her.’

- (44) María<sub>i</sub> piensa que Luisa<sub>j</sub> se lo dio a [ella misma]<sub>i,\*j,\*k</sub>.  
 Mary thinks that Luisa her it gave to her self  
 ‘Mary<sub>i</sub> thinks that Luisa gave it to her<sub>i</sub>.’
- (45) Juan<sub>i</sub> nos habló de él<sub>i,j</sub> ayer.  
 John us spoke of him yesterday  
 ‘John told us about him/himself yesterday.’
- (46) Juan<sub>i</sub> nos habló de [él mismo]<sub>i,\*j</sub> ayer.  
 John us spoke of him self yesterday  
 ‘John told us about himself yesterday.’

The analysis that we presented in the previous section could be extended to these examples as well. In (41), for example, *her* alone could refer to the DP *Mary*, the DP *Mary’s daughter*, or some DP with feminine gender Features. Adjoining *herself* to *her* forces coreference with the closest matching c-commanding antecedent that *her* alone can have. Notice that *her herself* cannot refer to *Sally* in (41), because that would violate Binding Theory Principle B, which we assume is evaluated before *herself* is adjoined. Actually, these sentences constitute evidence that it is the reflexive that is adjoined to the pronoun and not the other way around. If the pronoun were adjoined the reflexive, the reflexive would be bound by the local antecedent, and then adjoining the pronoun would contradict this, since the local antecedent is actually the only element the pronoun cannot be bound by. A question we hope to address in the future is why Spanish allows the analog to *him himself* constructions in object position but not in subject positions.

## 7. Conclusion

In this paper, we have proposed an analysis of the properties of *he himself* in English. We have suggested that the Bickerton-McKay controversy was unsettled because each considers a different dialect of English. We have focused on the dialect presented by Bickerton, agreeing with his assessment that *he himself* has to be coreferent with a non-local c-commanding antecedent if there is one in the sentence. However, unlike Bickerton, we have offered an analysis that is not based on “unusual” properties of the lexical item *he himself*. Instead, we have proposed an adjunction operation and have tried to link the properties of the complex *he himself* to more general properties of adjunction operations. We would like to add that what we have presented here does not bear on the validity of different analyses that explain Binding properties in the Minimalist Program, and all of them should be compatible with our proposal, in principle. Thanks to its emphasis on derivational properties of the grammar, the Minimalist Program offers a way to characterize adjuncts as inserted in a derivation acyclically and to define their interaction with other properties of the grammar; in this case, with Binding Theory principles.

## Notes

\* We would like to thank the University of Michigan Syntax Discussion Group for comments on a preliminary presentation of this paper. We are particularly grateful to Sam Epstein, Cati Fortin, Dina Kapetangianni, Hamid Ouali, Acrisio Pires, and Daniel Seely. We are also grateful to the audience at the Minimalist Theorizing Workshop at Indiana University for their helpful comments.

1. In order to maintain consistency among the various examples presented here, we have abstracted away from certain properties of the examples in the previous research on *he himself*.
2. What we present here does not favor any specific minimalist analysis of Binding relations over the others. We assume that our approach is compatible, in principle, with all these analyses.
3. Another possibility is that (9) is ungrammatical just because of the Case Feature of *himself* cannot be checked/valued.
4. Another possibility is that only anaphoric elements with no overt Case marking can be bound outside the CP (Daniel Seely, pc). We leave this issue open here.
5. See Uriagereka (1998) for discussion on cyclic vs. acyclic adjunction, an issue that goes back to Lebeaux (1988).
6. This could well be understood as an economy condition, although this idea would be hard to implement given that adjunction is free in principle; that is, it does not obey any last resort type of restriction.

## References

- Baker, C. L. 1995. Contrast, discourse prominence, and intensifications, with special reference to locally free reflexives in British English. *Language* 71: 63–101.
- Bickerton, D. 1987. He himself: Anaphor, pronoun, or ...? *Linguistic Inquiry* 18: 345–348.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Lebeaux, D. 1988. *Language Acquisition and the Form of the Grammar*. PhD dissertation, University of Massachusetts, Amherst.
- May, R. 1977. *The Grammar of Quantification*. PhD dissertation, MIT.
- McKay, T. J. 1991. He himself: Undiscovering an anaphor. *Linguistic Inquiry* 22: 368–373.
- Uriagereka, J. 1998. *Rhyme and Reason*. Cambridge MA: The MIT Press.
- Webelhuth, G. (ed.). 1995. *Government and Binding Theory and the Minimalist Program: Principles and parameters in syntactic theory*. Oxford: Blackwell.
- Williams, E. 1994. *Thematic Structure in Syntax*. Cambridge MA: The MIT Press.



# A minimalist analysis of Japanese passives

Takuya Goro

University of Maryland at College Park

## Abstract

This paper presents an analysis of Japanese passives in the framework of the Minimalist Program. The analysis based on bare phrase structure theory derives attested properties of Japanese passives, without postulating multiple lexical entries for passive morpheme *-(r)are*. The theory of syntactic derivations with minimal constraints predicts four different possible derivations of Japanese passives, and yield an important consequence regarding the interpretation/ $\theta$ -marking of the subject DP in passives and related constructions. Specifically, I argue that null-operator movement is involved in the licensing the subject DP in one of the predicted derivations, and show that the analysis is supported by a novel set of data.

## 1. Introduction

In Japanese passive sentences, the logical subject (agent<sup>1</sup>) is marked either by *-ni* (*by*) or *-ni yotte* (*by-owing*). Inoue (1976) observed that these two morphemes yield slightly different semantic interpretations of the grammatical subject. For example, when the logical subject is suffixed with *-ni*, it is interpreted as an individual (typically negatively) “affected” by the main predicate event. The following pair by Inoue illustrates the point:

- (1) a. #*Kaikai-ga gityoo-ni sengens-are-ta*  
opening-Nom chairperson-by announce-Pass.-Past  
“The opening of the meeting was affected by the chairperson’s announcing it.”
- b. *Kaikai-ga giyoo-ni yotte sengens-are-ta.*  
opening-Nom chairperson-by owing announce-Pass.-Past  
“The opening of the meeting was announced by the chairperson.”

The grammatical subjects in (1) are an abstract noun (*kaikai*: the opening). When the grammatical subject is marked by *-ni*, as in (1a), it is interpreted as being negatively affected by the chairperson’s announcement, and thus sounds quite awkward. Conversely, the subject in the *-ni yotte* passive in (1b) is interpreted as a pure patient

without any implication regarding negative affection. Consequently, the awkwardness in (1a) does not arise in (1b).

The above observation shows that in direct *-ni* passives, (2a), the grammatical subject obtains dual thematic characteristics: it is an affectee, and at the same time, it is a patient. Interestingly, Japanese provides a construction in which the dual thematic roles in the *-ni* passive can be teased apart: the so-called indirect passive construction in (2b).

- (2) a. John-ga Mary-ni hihans-are-ta.  
 John-Nom Mary-by criticize-Pass.-Past  
 “John was affected by Mary’s criticizing him”  
 (John = affectee = patient)
- b. John-ga Mary-ni kare-no seito-o hihans-are-ta.  
 John-Nom Mary-by his student-Acc criticize-Pass.-Past  
 “John was affected by Mary’s criticizing his student”  
 (John = affectee; his student = patient)

In this paper, I examine the structures of these Japanese passives in the framework of the Minimalist Program (Chomsky 1995, 2000, 2001a, 2001b). I take a theory-driven strategy as a way of approaching the problem. By investigating predictions that current syntactic theory makes regarding the derivation of Japanese passives, some previously unnoticed data are revealed without resorting to arbitrary assumptions to account for empirical generalizations. The analysis based on bare phrase structure theory neatly captures attested properties of Japanese passives, and provides an important consequence with respect to the interpretation of the subject DP in splitting constructions, as in (2b).

## 2. The structure of passives

### 2.1 Some fundamental assumptions

First, let us present some standard assumptions about the passive morpheme in Japanese, *-(r)are*:

- (3) a. *-(r)are* absorbs case-marking ability of transitive *v*.  
 b. *-(r)are* suppresses the agent role of transitive *v*.  
 c. *-(r)are* is a predicate (=syntactic head) that assigns affectee role to a DP.

The assumptions in (3a) and (3b) concerning passive morphemes in natural language are widely accepted (cf. Jaeggli 1986). (3c) has been assumed in the analysis of indirect passives in Japanese and also in Hoshi’s (1994a,b) analysis of *-ni* direct passives. Here, we start from the simplest hypothesis: we assume that there is one uniform *-(r)are* that exhibits all the properties in (3). However, this simplest hypothesis evokes many

questions concerning the interpretation of the subject and case-marking in Japanese passives. For example:



- (i) if  $-(r)are$  is uniformly a case-absorber, why is the patient argument of a full indirect passive like (2b) marked with accusative  $-o$ ?
- (ii) If  $-(r)are$  is uniformly affectee-assigner, then why in  $-ni$  *yotte* passives like (1b) is the subject not interpreted as an affectee, in contrast with  $-ni$  passives?

I show the theory of syntactic computation in the Minimalist Program, combined with a supplementary assumption about *-ni* phrases, provides straightforward answers to these questions, and hence we are able to keep the simplest hypothesis about *-(r)are*.

First, considering the relation between *-(r)are* and other verbal morphemes is useful. Some Japanese verbs alternate between transitive and unaccusative, and such verb roots are directly followed by a transitive/unaccusative morpheme. The passive morpheme *-(r)are* appears between the transitive/unaccusative morpheme and a tense morpheme:

- (4) a. ag - a - ru  
root unacc. Pres. ("rise")
- b. ag - e - ru  
root trans. Pres. ("raise")
- c. ag - a - rare - ru  
root unacc. Pass. Pres. ("rise"-passive)
- d. ag - e - rare - ru  
root trans. Pass. Pres. ("be raised")

Let us assume that the transitive/unaccusative morpheme is an instantiation of functional light verb  $v^2$ , and the  $v$  head is always present in syntactic structure, regardless of whether the grammatical voice is active or passive. Then, there are two logically possible ways to introduce  $-(r)are$  into the syntactic derivation, ensuring its presence in the right position: the first possibility is a direct merger of  $-(r)are$  with  $v$  head before the merger of  $v$  with another syntactic object. Another possibility is the merger of  $-(r)are$  with  $vP$ , followed by head-raising of  $v^3$ :

- (5) a.  b. 

In the framework of Chomsky (2000, 2001a, and 2001b), the uninterpretable structural case feature on nouns are valued and deleted under Agree with the appropriate functional head. As a technical implementation of the case absorbing property of the passive morpheme, let us assume that *-(r)are* has a complete set of uninterpretable

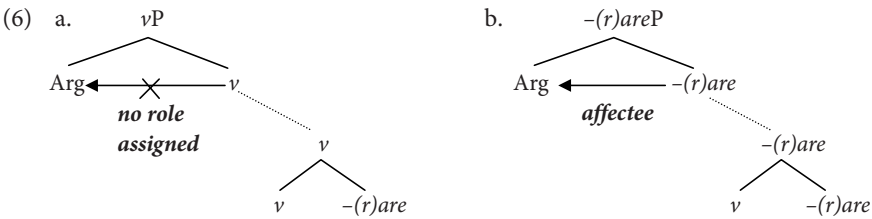
$\phi$ -features, but lacks the case-assigning property of  $v$ . In (5a) the uninterpretable features of  $-(r)are$  induce local Agree with  $v$  and their uninterpretable  $\phi$ -features are deleted under complete Match. After this operation,  $v$  loses all of its uninterpretable features and is no longer active; therefore,  $v$  cannot agree with any DP in its domain<sup>4</sup>. In contrast, in (5b)  $-(r)are$  is introduced into the derivation *after* the computation within  $vP$  has completed, which means that the  $v$  in (5b) had been able to agree with and assign accusative case to a DP in its domain. In other words, case absorption by  $-(r)are$  occurs in (5a) but does not occur in (5b).

What about the property (3b), external role suppression? I am following Chomsky's (2001b) assumption that s-selection is eliminated from narrow syntax. The assumption entails that syntactic operations are free from  $\theta$ -theoretic considerations, and failure to satisfy the " $\theta$ -criterion" does not block syntactic convergence but yields semantic deviance. Along this line, I also assume that the suppression of agent role of  $v$  by  $-(r)are$  occurs in the semantic component. Under this approach, the difference in the timing of the introduction of  $-(r)are$  ((5a) or (5b)) does not affect the property of external role suppression. This is because in both cases  $v$  is merged with  $-(r)are$  in the narrow syntax, and the configurational relations between  $v$  and  $-(r)are$  are the same at the level to which the suppression operation applies. Thus, in both (5a) and (5b) the merge of the external argument to  $vP$  is syntactically allowed, but that argument cannot receive an agent role directly from  $v$ , because the agent role of  $v$  is always suppressed by  $-(r)are$  at the level where  $\theta$ -role assignments take place.

We have seen two different possibilities with respect to the timing of the introduction of  $-(r)are$  into the syntactic computation. Another difference emerges with respect to the syntactic label of the head-head amalgamate  $v-(r)are$ . Under the theory of bare phrase structure (Chomsky 1995, 2000), the label of syntactic object K constructed by the merger of  $\alpha$  and  $\beta$  is either  $\alpha$  or  $\beta$ . Following this approach, we have, in principle, two possibilities regarding the label of the  $v-(r)are$  amalgamate: either  $v$  or  $-(r)are$ :

- (6) a.  b. 

Let us assume that both of these possibilities are equally allowed. Note that this is a minimal assumption; we do not need any stipulated constraint for the determination of labels. Under this assumption, the projection of  $v-(r)are$  amalgamate is  $vP^5$  if  $v$  determines the label ((6a)), and, say,  $-(r)areP$  if  $-(r)are$  determines the label ((6b)). The difference of the label of projection affects the property (3c): affectee role assignment by  $-(r)are$ . I assume, following a fairly well-motivated assumption (cf. Marantz 1984, Larson 1989), that  $\theta$ -roles of arguments are determined by their sister. If this is the case, an argument merged in the projection of  $-(r)are$  is assigned affectee role by its sister  $-(r)are$  (more specifically, by the syntactic object constructed by merger of  $-(r)are$  and verbal phrase with its label determined by  $-(r)are$ ), but an argument merged to the projection of  $v$  cannot be assigned any role by its sister  $v$ : as we have seen above, the external role of  $v$  is suppressed.



The discussion so far shows that the current syntactic theory in the Minimalist Program provides a natural way to derive different possibilities with respect to “case absorption” and “affectee role assignment.” We can keep to the simplest assumption that there is one uniform *-(r)are*. This uniform *-(r)are* may behave differently in accordance with (i) the timing of introduction of *-(r)are* into derivation (before/after *v*-Obj Agree), and (ii) the syntactic label of *v*-*(r)are* amalgamate (*v*/*-(r)are*). Importantly, the different possibilities with respect to (i) and (ii) are provided by general principles in Minimalist syntax without any stipulated constraints. This seems to be an optimal conclusion under the Strongest Minimalist Thesis that holds that there is no language-specific constraint without principled explanation in terms of Interface Conditions or general conditions of computational efficiency (Chomsky 2001b).

Let us now turn to the nature of agent phrases in passives. As we have seen, if the agent role of *v* is always suppressed in passive constructions with *-(r)are*, then the agent role must be assigned by some way other than direct  $\theta$ -marking by *v*. In this respect, the difference between *-ni* and *-ni yotte* becomes relevant. Specifically, while the latter seems to be an independent agent-role assigner, the former is not. The latter (with proper adnominal inflection) as a prenominal modifier can be interpreted as an agent just as the English *by*-phrase, but the former cannot:

- (7) a. Teki - ni yoru kougeki  
          enemy by owing attack  
          “an attack by the enemy”  
      b. \*Teki-ni kougeki  
          enemy by attack
- (8) a. Chomusuki-ni yoru hon  
          Chomsky by owing book  
          “a book by Chomsky”  
      b. \*Chomsuki-ni hon  
          Chomsky by book

This fact suggests that while *-ni yotte* can assign an agent role independently of the environment in which the *-ni yotte* phrase appears, some kind of licensing condition seems to be involved with *-ni* marked agent phrases.

As for the syntactic property of *-ni* in passives, there are some data that suggest

that it is a postposition. In Japanese, dative arguments of ditransitive constructions are marked by the particle *-ni*, but dative case *-ni* behaves quite differently from *-ni* in passives. Sadakane and Koizumi (1995) observe following contrasts:

- (9) a. \*Taroo-ga *sensee-ni* 3-*nin* home-rare-ta  
 Taroo-Nom teacher-by 3-CL praise-Pass.-Past (-*ni* direct passive)  
 “Taroo was affected by three teacher’s complimenting him”
- b. \*Taroo-ga *sensee-ni* 3-*nin* ronbun-o home-rare-ta  
 Taroo-Nom teacher-by 3-CL paper-Acc praise-Pass.-Past  
 (-*ni* indirect passive)  
 “Taroo was affected by three teacher’s complimenting his paper”
- c. Taroo-ga tomodati-ni 3-*nin* hanataba-o age-ta.  
 Taroo-Nom friend-Dat 3-CL bouquet-Acc give-Past  
 “Taroo gave a bouquet to three of her friends”
- (10) a. Taroo-ga home-rare-ta no-wa Tanaka sensei-\*(*ni*) da  
 Taroo-Nom praise-Pass-Past NL-Top Tanaka prof.-by Cop  
 “It is by Prof. Tanaka<sub>i</sub> that Taroo was affected by his<sub>i</sub> complimenting him”
- b. Taroo-ga ronbun-o home-rare-ta no-wa Tanaka sensei-\*(*ni*) da  
 Taroo-Nom paper-Acc praise-Pass-Past NL-Top Tanaka prof.-by Cop  
 “It is by Prof. Tanaka<sub>i</sub> that Taroo was affected by his<sub>i</sub> complimenting his paper”
- c. Taroo-ga hanataba-o age-ta no-wa Jiro-(?*ni*) da  
 Taroo-Nom bouquet-Acc give-Past NL-Top Jiro-Dat Cop

The examples in (9) show that *ni*-phrases in passives, in contrast with *-ni* marked dative objects of “give,” cannot host floated numeral quantifiers. Similarly, whereas passive *-ni* must be present in the focus position of a cleft construction ((10a,b)), the dative case marker *-ni* cannot appear in that position. Given these contrasts, Sadakane and Koizumi concluded that the particle *-ni* in passives is a postposition rather than a dative case-marker (see also Miyagawa 1989), and I follow that assumption.

If the above observations are correct and *-ni* in passives is a postposition with no inherent ability to assign an agent role, then we need a mechanism to make *-ni* phrases in passives be interpreted as agents. I assume, following Jaeggli (1986), that there is a transfer of the external role of *v* to the *-ni* phrase through passive morpheme *-(r)are*. More specifically, I propose the following mechanism for  $\theta$ -transmission in passives:

- (11) a. Passive morpheme *-(r)are* suppresses the external role of transitive *v* by absorbing the role from its sister.
- b. Passive morpheme *-(r)are* may discharge the absorbed role to a postpositional *-ni* phrase within its projection.

Keeping to the assumption earlier in the discussion, we assume that (11a) and (11b) are operations in semantic component. (11b) amounts to the claim that a *-ni* phrase in passive sentences can be interpreted as an agent only if it is in the projection of *-(r)are*, but, crucially, cannot be interpreted as an agent in the projection of *v*, with *v*'s external role suppressed by *-(r)are*. Thus, the *-ni* agent phrase cannot appear in (6a), in which *v* determines the label of the *v-(r)are* amalgamate and the whole projection is *vP*. In contrast, the *-ni yotte* agent phrase is compatible with both (6a) and (6b) because *-ni yotte* itself is an agent-role assigner.

Our proposal in (11) captures the correlation between the presence of the *-ni* phrase and the affectee interpretation of the grammatical subject, such as we have observed in (1). If the *-ni* agent phrase appears, it follows that it is licensed within a projection of *-(r)are* (assumption (11b)), and if *-(r)are* projects, it  $\theta$ -marks an affectee argument, as in (6b). Also, the approach explains why *-ni* phrases in nominals (and in various other constructions) lacks agent interpretation ((7) and (8)): there is no projection of *-(r)are* in which the transfer of agent role occurs.

Summarizing this subsection, I have proposed the following assumptions about the Japanese passive morpheme *-(r)are*:

- (12) a. Passive morpheme *-(r)are* has a complete set of uninterpretable  $\phi$ -features.
- b. Passive morpheme *-(r)are* suppresses the external role of transitive *v* by absorbing the role from its sister. (= (11a))
- c. Passive morpheme *-(r)are* may discharge the absorbed role to a postpositional *-ni* phrase within its projection. (= (11b))
- d. Passive morpheme *-(r)are* assigns affectee role to a DP in the specifier position of its projection<sup>6</sup>.

We will examine in the next subsection the predictions that current Minimalist syntax makes about possible structures involving *-(r)are*.

## 2.2 Possible derivations of passives

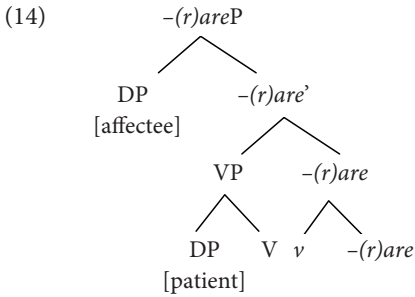
As we have seen before, the current theory provides four possibilities regarding the derivations of passive sentences in Japanese. Those four possibilities are listed in (13):

- (13) a. direct merger of *-(r)are* with *v*, *-(r)are* determines the label of *v-(r)are* amalgamate
- b. merger of *-(r)are* with *vP*, *-(r)are* determines the label of *v-(r)are* amalgamate
- c. direct merger of *-(r)are* with *v*, *v* determines the label of *v-(r)are* amalgamate

- b. merger of  $-(r)are$  with  $vP$ ,  $v$  determines the label of  $v-(r)are$  amalgamate

Let us examine the derivations in turn.

The derivation in (13a) yields the following structure:



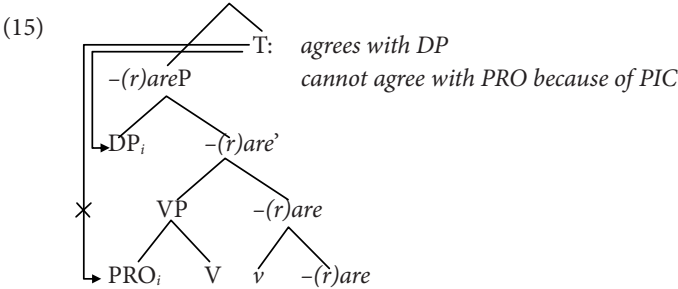
Since in (14)  $-(r)are$  projects, it takes an affectee argument and the structure is compatible with both  $-ni$  and  $-ni yotte$  agent adjunct, which is not shown in the tree. The theory of Agree predicts that the affectee argument is assigned nominative case by T. How about the case of the patient argument? The accusative case of  $v$  is absorbed by  $-(r)are$ . Then, the only possible case assigner would be T above  $-(r)areP$ . However, if we follow Chomsky (2000) by assuming a locality condition on Agree, namely the Phase Impenetrability Condition, then Agree between T and the patient DP should be blocked.

- (15) Phase Impenetrability Condition (PIC)

Elements that are in the domain of a strong phase PH is not accessible to operations from outside of PH.

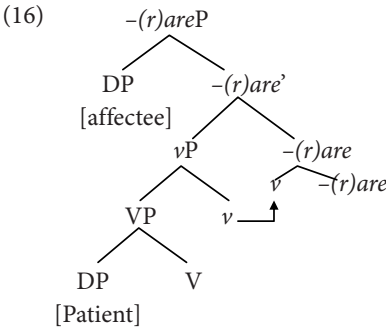
The  $-(r)areP$  in (14) takes an “external” affectee argument, and thus it is natural to assume that the phrase constitutes a strong phase, just as a transitive  $vP$  with an external argument does. If this assumption is correct, then access from outside of  $-(r)areP$  into its domain is prohibited by the PIC in (15), which means the patient argument in this structure can never be assigned structural case<sup>7</sup>. From this consideration, it follows that the patient argument in (14) must be such an element that requires no structural case (in current terms, has no case feature). Let us tentatively assume that PRO is such an element – here we are following rather classic case-theoretic assumption that PRO appears in non-case positions (Chomsky 1981). The widely observed semantic property of PRO is that it is referentially dependent on the local antecedent. Thus, in the configuration (14) the PRO patient argument must be co-referential with the affectee argument. The tree diagram (16) illustrates the point:





In the structure in (14)/(15), the affectee and patient role are assigned to two different DPs, thereby splitting onto two different syntactic positions. However, the locality requirement on case assignment forces the assignee of the latter role to be a null argument which is referentially dependent on the assignee of the former role. Thus, the overt subject in this structure is interpreted as if it has dual thematic roles, since the patient argument lacks phonological contents and co-referential with the overt subject. This predicted property conforms quite naturally to the attested property of *-ni* direct passives, such as in (2a). The presence of the *-ni* agent phrase, under the current approach, entails that there must be a projection of  $-(r)are$ , in which the affectee role is assigned to its specifier DP. Thus, in *-ni* direct passives the subject is interpreted as if it is assigned both affectee and patient role.

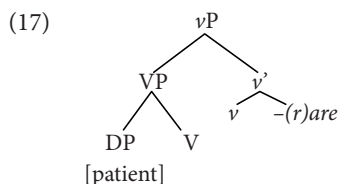
The next possibility (13b) predicts the following structure:



The major difference between (14) and (16) is that in the latter derivation  $-(r)are$  is merged with  $vP$  after Agree between  $v$  and the patient DP has been established. In other words, there is no “case absorption” in the derivation in (16), and since the patient DP is assigned accusative case from the transitive  $v$ , the argument can be an overt referential DP. This derivation nicely corresponds to so-called indirect passives, such as in (2b). We call the structure “affectee-patient splitting”: the two roles are assigned to separate arguments which are independently case-marked<sup>8</sup> and thus both have phonological contents.

The predicted structure under the possibility (13c) is quite different from the former two structures. Specifically,  $v$ , not  $-(r)are$ , determines the label of  $v-(r)are$

amalgamate and in the projection  $\nu P$  no affectee argument or  $-ni$  agent phrase would be licensed, as we have seen above:

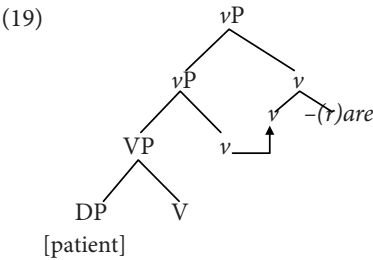


This  $\nu P$  lacks anything akin to an “external argument,” hence we assume it is not a strong phase. The Case-marking ability of  $\nu$  is absorbed by  $-(r)are$  before  $\nu$  agrees with the patient DP, but in this case the DP is accessible from T (because there is no violation of PIC). In order to satisfy the EPP feature of T, the patient DP is raised to Spec-TP, and assigned nominative case. That subject DP is interpreted as a pure patient. As we have seen in the previous subsection, the structures of (14/15) and (17) naturally capture the correlation between affectee reading of subject and the presence of  $-ni$  phrase, exemplified in (18) (=1)).

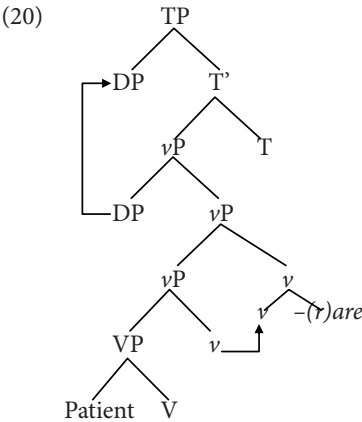
- (18) a. #Kaikai-ga gityoo-ni sengens-are-ta  
 opening-Nom chairperson-by announce-Pass.-Past  
 “The opening of the meeting was affected by the chairperson’s announcing it.”
- b. Kaikai-ga giyoo-ni yotte sengens-are-ta.  
 opening-Nom chairperson-by owing announce-Pass.-Past  
 “The opening of the meeting was announced by the chairperson.”

Since, under our assumption, the  $-ni$  marked agent is not licensed in the structure in (17), the presence of the  $-ni$  marked agent entails that the structure is (14/15), and in the structure, the subject is assigned affectee role. If the subject is incompatible with affectee interpretation, the sentence becomes unacceptable, as in (18a). Notice that the current approach does not resort to any unnecessary stipulation in order to derive the different derivational possibilities. We keep to the simplest assumption that there is one uniform  $-(r)are$ , and fundamental and general assumptions of minimalist syntax offer possibilities of different derivations. This seems to be an ideal result: independent stipulations are made only with respect to a lexical item, i.e.,  $-(r)are$  ((12)), and syntactic computations are free from stipulated constraints.

The last possibility (13d) creates an interesting problem. The predicted structure is:



In (19), *v* agrees with and assigns accusative case to the patient DP. Case and theta requirements are satisfied within the maximal phrase, and there is no receiver of nominative case of T. Let us assume that it is possible to adjoin another DP to (19), and the DP agrees with T and is raised to TP-Spec in order to satisfy the EPP feature of T:



Note that no new assumptions are required to *allow* this adjunction of DP (and subsequent raising). As long as we keep to the assumption that syntactic operations are free from theta-theoretic considerations, this operation should be allowed just as any other legitimate applications of Merge. In fact, one would need to create a new constraint to *block* this adjunction. Thus, I simply follow the Minimalist idea and assume that there is no language-specific constraint such that it blocks the adjunction of an additional DP to the structure in (19).

The derivation in (20) or anything that is similar to it, as far as I know, has never been considered in previous literature on Japanese passives. Nevertheless, we have a reason to believe that the derivation (20) does exist. Observe that the contrast between *-ni* and *-ni yotte* passives extends to the cases of indirect passives with accusative-marked patient:

- (21) a. \*kokusaikaigi-ga                      gityoo-ni                      kaikai-o                      sengens-are-ta  
         international conference-Nom   chairperson-by   opening-Acc   announce-Pass.-Past  
         “The international conference was affected by the chairperson’s announcing its opening.”

- b. kokusaikaigi-ga                      gityoo-ni              yotte    kaikai-o              sengens-are-ta  
 international conference-Nom chairperson-by    owing opening-Acc announce-Pass. -Past  
 “The opening of the international conference was announced by the chairperson.”

Just as in the pair (18), only *-ni* transitive indirect passive becomes unacceptable if the subject refers to an entity that is incompatible with affectee interpretation. The point is that the *-ni yotte* transitive indirect passive does not force its subject to be interpreted as an affectee. This is expected from the structure in (20): since *-(r)are* does not project in (20), the subject is not assigned an affectee role, and the structure is compatible only with the *-ni yotte* agent phrase.

However, another problem arises here: how can the subject DP be interpreted? There is no  $\theta$ -assigning head which is local to the DP, and, the subject is not expletive, but a referential DP in (21b). The grammaticality of the sentence in (21b) suggests that this sentence does not involve any  $\theta$ -criterion violation (or whatever constraint that has the same effect). Given this, we need some mechanism to make the DP be interpreted/assigned  $\theta$ -role. Let us assume, along the lines with Kuno (2001), that movement of a null-operator is involved in the thematic interpretation of the subject DP. Kuno (2001) proposes that the so-called “major subject” construction in Japanese is licensed/interpreted via null-operator movement that targets the sister constituent of major subject:

- (22) Taroo<sub>i</sub>-ga    [ <sub>$\alpha$</sub>  Op<sub>i</sub> [ *t<sub>i</sub>* imouto-ga] bijin-da]  
 Taroo-Nom                      sister-Nom beautiful-Cop  
 “Taroo is such that his sister is beautiful”

The sentence includes multiple nominative-marked DPs, and the outer DP does not seem to be directly  $\theta$ -marked by the predicate “*beautiful*.” Under Kuno’s analysis, just as in the case of relative clause interpretation, the null-operator movement creates an environment for Predicate Abstraction that makes a derived predicate from a constituent whose original semantic type is that of proposition (e.g., Heim and Kratzer 1998). Hence, the phrase  $\alpha$  denotes the following function:  $\lambda x. x$ ’s sister is *beautiful*. This analysis provides a way of solving the problem of interpretation of the subject DP in (21b). Through null-operator movement and Predicate Abstraction, the sister constituent of the subject DP is converted to a derived predicate, and ordinary semantic composition rules (those which used in the interpretation of relative clause) can interpret the resultant structure:

- (23) kokusaikaigi-ga [Op<sub>i</sub> [gityoo-ni yotte ] [ *t<sub>i</sub>* kaikai-o] sengens-are-ta] (= (21b))  
 the interpretation of the bracketed phrase:  $\lambda x. x$ ’s opening was announced by the chairperson

Thus, as in the case of direct passives, we have two different underlying structures for superficially quite similar constructions: “affectee/patient splitting” structure in (16) for *-ni* indirect transitive passives, and “major subject” structure in (20/23) for *-ni yotte* indirect transitive passives. In the former case, the subject is assigned its affectee role by outer-*vP* predicate *-(r)are*, and in the latter case the subject is interpreted via

null-operator movement. The analysis is supported by the semantic contrast between subjects of *-ni* indirect transitive passive and subjects of *-ni yotte* indirect transitive passive. In the next section, we explore the consequence of the null-operator movement approach.

### 3. Splitting and full unaccusatives

In the previous section, we proposed a null-operator movement analysis for the *-ni yotte* indirect transitive passives. The analysis makes an empirical prediction about the licensing condition for the “major subject” passive construction. We assume that the “major subject” in those passives is licensed via null-operator movement. If any null-operator movement has taken place, then there must be a base argument position for the null-operator. In other words, the “major subject” structure in (20/23) is possible only when there is a “gapped” base argument position that is linked to the null-operator, which in turn is coindexed with the “major subject”. For example, the empty subject position of the patient DP in (21b) - *kaikai* “opening” - is thematically related to the “major subject”: it is the international conference’s opening. In contrast, we can also create indirect passive sentences in which there are no gapped argument positions that are associated with the subject.

- (24) a. Taroo-ga Hanako-ni sono mondai-no kaiketuhou-o mituke-rare-ta.  
 Taroo-Nom Hanako-by that problem-Gen solution-Acc find-Pass.-Past  
 “Taroo was affected by Hanako’s finding of the solution of that problem”
- b. FBI-ga jimotokeisatu-ni tehaichu-no hannin-o tukamae-rare-ta.  
 FBI-Nom local police department-by wanted-Gen criminal-Acc arrest-Pass.-Past  
 “FBI was affected by the local police department’s arresting the wanted criminal”

In both (24a) and (24b), the subject does not seem to be linked to any argument position within the predicate phrase. This suggests that the interpretation of the subjects in these sentences does not involve null-operator movement. Under the current analysis, those sentences have the structure in (16), and the subjects are directly  $\theta$ -marked by *-(r)are*.

The grammaticality of the sentences in (24) provides partial support for our claim that there are two ways to interpret the subject in indirect passives: direct  $\theta$ -marking by *-(r)are*, or null-operator movement. The sentences in (24) eliminate the possibility that those subjects are interpreted via the second option, and still they are grammatical, just as predicted by our theory. Further support to our theory would come from cases in which the possibility that the subject is  $\theta$ -marked by *-(r)are* is eliminated. In such cases, the availability of null-operator movement should make a difference. We predict that in “gapped” cases like (21b) the sentence is just fine; however in “gapless” cases like (24) the sentence should become bad, due to the lack of a way to interpret ( $\theta$ -mark) the subject.

The class of verbs called *full unaccusatives* in Sano (2000) provides cases in which the subject cannot possibly be  $\theta$ -marked by  $-(r)are$ . The verbs are interesting in that although they have transitive counterparts, they appear in an argument structure that is superficially identical with that of the passive (patient marked by  $-ga$ , and agent marked by  $-ni$ ):

- (25) a. Taroo-ga Hanako-o mituke-ta (transitive-active)  
Taroo-Nom Hanako-Acc find-Past
- b. Hanako-ga Taroo-ni mituke-rare-ta (transitive-passive)
- c. Hanako-ga Taroo-ni mitukat-ta (full unaccusative)  
Hanako-Nom Taroo-by be-found-Past  
“Hanako was found by Taroo.”

Morphologically, the full unaccusative morpheme shows complementary distribution with the transitive morpheme, in contrast with the passive  $-(r)are$  which appears outside of the transitive morpheme:

- (26) a. mituk - *a(t)* - ru b. mituku - *e* - rare - ru  
find full-unacc. Pres. find trans. Pass. Pres.

Along the lines with the discussion in section 2.1, we take this fact as evidence for analyzing the full unaccusative morpheme as a kind of light verb head, which takes VP, but not  $vP$  as its complement. In short, full unaccusatives are verbs that allow passive-type arrangement of arguments, without the ‘real’ passive morpheme  $-(r)are$ . We will not go into the issue of how that is possible. What is important for our purpose is to observe that full unaccusatives are also able to have another argument, just like indirect passives:

- (27) a. Taroo<sub>i</sub>-ga hahaoya-ni reiten-no touan-o mitukat-ta.  
Taroo-Nom mother-by zero score-Gen exam paper-Acc be-found-Past  
“Taroo’s exam paper with a zero score was found by his mother.”
- b. CIA-ga terorisuto-ni sousakan-o tukamat-ta.  
CIA-Nom terrorists-by agent-Acc be-capture-Past  
“The CIA’s agent was captured by terrorists”

The examples in (27) sound fairly good. Since there are no  $-(r)are$  verbal morphemes in the sentences, it cannot be the case that the subject is  $\theta$ -marked by  $-(r)are$ . Notice that in those sentences the subjects are thematically linked to the patient DP, as their English translations show. This suggests that there are null operators that originate in the “subject” position of the patient DP, and they undergo movement in order to create a derived predicate. Given this, we now eliminate the possibility of null-operator movement from the full unaccusative structures. That is, we replace the predicates in the sentences in (24) with full unaccusative verbs:

- (28) a. \*Taroo-ga Hanako-ni sono mondai-no kaiketuhou-o mitukat-ta.  
Taroo-Nom Hanako-by that problem-Gen solution-Acc be-found-Past
- b. \*FBI-ga jimotokeisatu-ni tehaichu-no hannin-o tukamat-ta.  
FBI-Nom local police department-by wanted-Gen criminal-Acc be-arrested-Past

(28a) and (28b), which minimally contrast with grammatical (24a) and (24b), are completely bad, just as predicted by our theory. In fact, the empirical facts perfectly match our predictions. To recap, our theory makes specific predictions about in what contexts the subject in indirect passive type structures is licensed (including those with full unaccusatives). When either direct  $\theta$ -marking by  $-(r)are$  or null-operator movement is available, the subject in such structures are predicted to be licensed, and the facts in (24) and (27) support the prediction. However the elimination of those two possibilities, as in (28), is predicted to result in ungrammaticality, which is again borne out.

The exactness of the empirical predictions is a striking consequence of the current approach. Let us summarize the steps taken so far. First, our approach with minimal constraints made a prediction that the structure in (20) exists as a possible structure of passives in Japanese. We employed the null-operator movement approach to the structure in order to make it consistent with  $\theta$ -theoretic generalization. Thus, those are byproducts of the theoretical predictions and considerations, rather than stipulations that were called for in order to accommodate descriptive needs. However these theoretical products in turn allowed us to make brand-new empirical predictions, and tests revealed that the predictions are quite accurate. I take this result as adding some credibility to the Minimalist Program as an approach to the knowledge of natural language.

#### 4. Summary

In this paper, I examined the derivations/structures of Japanese passives under the Minimalist Program (Chomsky 1995, 2000, 2001a, 2001b). The analysis based on bare phrase structure theory neatly captures the attested properties of Japanese passives and provides an important consequence regarding the interpretation of the subject DP in the splitting constructions. Specifically, I argued that some splitting constructions require null-operator movement in order to license/interpret the “major subject,” and the analysis provides a new empirical prediction that is supported by novel sets of data.

## Notes

1. In this paper, I uniformly use the term *agent* to refer to the external thematic role of a transitive predicate, putting aside the variation of semantic relation between external argument and transitive predicate (*experiencer*, for example).
2. Although in the followings, I keep my discussion largely to cases with transitive *v*. Thus, “*v*” in the following text refers to the transitive light verb, unless explicitly noted as otherwise.
3. I assume that the movement must occur in narrow syntactic computation. There are several arguments for overt V-to-I raising in Japanese (Koizumi 2000, Hoshi 1994b), and if the overt V-to-I hypothesis is correct, then HMC forces the movement in (5b) obligatory.
4. I am following Chomsky’s (2001a) assumption about activation and agree.
5. The term “*vP*” or “*-(r)areP*” is used only for expository purposes. They have no theoretical content in the theory of bare phrase structure.
6. This is an informal statement; as has been discussed above, I assume  $\theta$ -assignment is restricted to sisterhood. Therefore, “true assigner” of the affectee role is not *-(r)are* itself but, say, *-(r)are*’. See below for details.
7. In Chomsky (2001a), PIC is weakened so that it allows accessing inside a strong phase until the next higher strong phase. Therefore in (15), for example, the complement position of  $V^0$  is still accessible from T, until the derivation reaches CP. Thus, if we adopt the newer version of PIC, we need to explain why an overt DP cannot appear in the complement position of the complement position of  $V^0$  in (15). I put this issue aside.
8. The affectee argument is assigned nominative case by T.

## References

- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays in minimalist syntax in honor of Howard Lasnik*, R. Martin and J. Uriagereka (eds), 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001a. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2001b. Beyond explanatory adequacy. *MIT occasional papers in linguistics* 21. Cambridge MA: The MIT Press.
- Heim, I. and A. Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
- Hoshi, H. 1994a. Theta role assignment, passivization, and exorporation. *Journal of East Asian Linguistics* 3: 147–178.
- Hoshi, H. 1994b. Passive, Causative and Light Verbs: A study on theta role assignment. PhD dissertation, University of Connecticut.
- Inoue, K. 1976. *Henkei-Bunpoo to Nihongo*. [Transformational Grammar and Japanese] 2 vols. Tokyo: Taishuukan.



- Jaeggli, O. 1986. Passive. *Linguistic Inquiry* 17:587–622.
- Kitagawa, Y. 1986. Subjects in Japanese and English. PhD dissertation, University of Massachusetts, Amherst.
- Koizumi, M. 2000. String vacuous overt verb raising. *Journal of East Asian Linguistics* 9:227–285.
- Kuno, M. 2001. Finite small clauses in Japanese and beyond. Ms., University of Tokyo.
- Larson, R. 1989. Right predicate raising. *MIT Lexicon Project Working Papers* 27.
- Marantz, A. 1984. *On the Nature of Grammatical Relations*. Cambridge MA: The MIT Press.
- Miyagawa, S. 1989. *Structure and Case Marking in Japanese* [Syntax and Semantics 22]. San Diego CA: Academic Press.
- Sadakane, K. and K. Koizumi. 1995. On the nature of the “dative” particle in Japanese. *Linguistics* 33:5–33.
- Sano, T. 2000. Issues on unaccusatives and passives in the acquisition of Japanese. *Proceedings of the First Tokyo Conference of Psycholinguistics*. Tokyo: Hitsuji Shobo.

# A minimalist view on long passive

Hirohisa Kiguchi

Miyagi Gakuin Women's University

## Abstract

This paper investigates (the (un)availability of) long passives and its interaction with phases proposed by Chomsky (1998). Assuming morphologically derived causative constructions share the same structural status with McGinnis' (2001, 2004) applicative constructions, this paper provides a unified explanation to the (un)availability of long passives both in causative and applicative constructions in various languages. Furthermore, this paper provides evidence for locality constraints on A-movement in Japanese and they should interact with phrasal and *phasal* structures. In so doing, it scrutinizes Kageyama's (1993, 1999) precedent analysis on long passivization in Japanese and maintains the superiority of the current "Minimalist" analysis. Finally, it is claimed that Japanese locality constraints, which are shown to correspond to the ones observed in Icelandic, are no different from other languages. This conclusion is in accord with Boeckx & Niinuma (2004).

\*Abbreviations are as follows. ACC: accusative; AGR: agreement; APPL: applicative; ASP: aspect; CAUSE: causative; DAT: dative; FOC: focus; FV: final vowel; GEN: genitive; HO: honorification; NOM: nominative; OP: object pronoun; PASS: passive; PR: present; SP: subject pronoun; TOP: topic.

## 1. Introduction

This paper seeks to provide a unified explanation to the (un)availability of long passives both in causative and applicative constructions in various languages. Assuming morphologically derived causative constructions share the same structural status with McGinnis' (2001, 2004) applicative constructions such as double object constructions in the spirit of Marantz (1993), this paper provides evidence that locality constraints on A-movement exist in Japanese and they should interact with not only phrase structure but also Chomsky's (1998) phase theory.

## 2. Applicatives and phases

### 2.1 McGinnis (2001, 2004)

There is an asymmetry in the syntax of applicative constructions within passivization (e.g., Baker 1988, Bresnan & Moshi 1990, Marantz 1993). As Barss & Lasnik (1986) observe, the first object in double object constructions asymmetrically c-commands the second object. Barss & Lasnik (1986) illustrate this c-command relation in a number of cases. For example, in (1a), the DO (=direct object), *himself* is bound by the IO (=indirect object). In (1b), the negative polarity item in the DO is licensed by the IO, and the bound variable reading of the pronoun is present for (1c).

- (1) a. Mary showed John himself in the mirror.
- b. Mary gave no one anything.
- c. Mary gave every worker<sub>1</sub> his<sub>1</sub> paycheck.

The double object construction in English, then, only allows the higher argument, namely the IO to be passivized as shown in (2) (e.g. Oehrle 1976).

- (2) a. Alice<sub>1</sub> was baked t<sub>1</sub> a cake.
- b. \*A cake<sub>1</sub> was baked Alice t<sub>1</sub>.

However, some applicative constructions like Kinyarwanda Benefactives allow not only *short* passives in which the higher object (Benefactive) moves to the matrix subject position as in (3a) but also ‘long’ passives in which the lower object (Theme) is raised to the subject position as in (3b) (e.g., Kimenyi 1980).

- (3) a. *Umukoóbwa<sub>1</sub> a -ra -andik-ir -w -a t<sub>1</sub> ibàrùwa n’ûmuhuûngu.*  
           girl                   SP-PR-write-APPL-PASS-ASP letter   by boy  
           “The girl is having the letter written for her by the boy.”
- b. *Ibàrùwa<sub>1</sub> i-ra -andik -ir -w -a umukoóbwa t<sub>1</sub> n’ûmuhuûngu.*  
           letter   SP-PR-write -APPL-PASS-ASP girl   by boy  
           “The letter is written for the girl by the boy.”

McGinnis (2001, 2004) proposes an analysis for this asymmetry in the syntax of applicative constructions. McGinnis (2001), who follows Pylkkänen’s (2001) proposal that some Appl heads take VP as their complements (=High Appl) and others appear as complements to V (=Low Appl), argues that the contrast in (2) is accounted for if High Appls are phases but not Low Appls as in (4).<sup>1</sup>

- Why can a High Appl head a phase while a Low Appl cannot? McGinnis (2001, 2004) suggests that what can count as a phasal head depends on its phrasal status in a given phrase marker. The gist of her proposal is shown in (5).

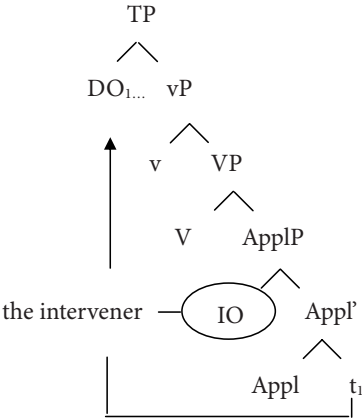
- According to (5ii), High Appl is a phase because it is the sister of VP and generates an argument in its specifier. On the other hand, Low Appl is not a phase because it is not the sister of VP. That is, whether a given Appl head can be a phase or not depends on its status in the phrase structure.

Given McGinnis' (2001, 2004) proposals, the availability of both long passive and short passive in (3) follows. Once the high applicative is a phase, which Chomsky (1998) assumes to have an EPP-feature, the DO can move to the outer specifier of the high ApplP, leapfrogging over the IO because there is no intervener between the high applicative head (=Probe) and the DO (=Goal), as in (5a). Subsequently, the DO can move from the outer specifier of the high ApplP to the matrix subject position as shown in (6b). Thus, long passive as in (3b) is available in a High Appl construction such as Kinyarwanda Benefactives.

- 
- The left tree diagram shows a hierarchical structure. At the top is 'ApplP', which branches into 'DO<sub>i</sub>' and 'Appl<sup>'</sup>'. 'Appl<sup>'</sup>' branches into 'IO' and another 'Appl<sup>'</sup>'. This second 'Appl<sup>'</sup>' branches into 'Appl (Phase)' and 'VP'. 'VP' branches into 'V' and 't<sub>1</sub>'. An upward-pointing arrow is on the left, and a horizontal arrow points from 't<sub>1</sub>' up towards the 'IO' node.
- The right tree diagram shows a similar structure. At the top is 'TP', which branches into 'DO<sub>1</sub>...vP'. 'vP' branches into 'v' and 'ApplP'. This 'ApplP' branches into 't<sub>1</sub>' and 'Appl<sup>'</sup>'. The 'Appl<sup>'</sup>' branches into 'IO' and '....'. An upward-pointing arrow is on the left, and a horizontal arrow points from 't<sub>1</sub>' up towards the 'DO<sub>1</sub>...' node.

On the other hand, since Low Appl is not a phase, the DO must directly move to Spec TP. Since the IO is closer to T, it serves as an intervener to the movement. It follows that the DO cannot be passivized in Low Appl constructions such as English.

(7) \*DO’s movement to Spec TP



In sum, the nature of the *phrasal/phasal* structure accounts for the (un)availability of long passive operation in an applicative construction.

3. The extension

3.1 Raising constructions as “Applicatives”

McGinnis (2001, 2004) extends this analysis to the availability of raising over Experiencers. As shown in (8a), Icelandic allows the experiencer to move to the subject position of a raising verb but does not allow the embedded subject to be raised to the matrix subject position over the experiencer as in (8b) (e.g., Thráinsson 1979). On the other hand, such an operation is possible in Italian as in (9) (e.g., Rizzi 1986).

(8) *Raising over the experiencer in Icelandic –Out = Low Appl*

- a. Jón        telur    [mér<sub>1</sub>        virðast t<sub>1</sub> [Haraldur        hafa    gert þetta  
Jon-NOM believes me-DAT to-seem Haraldur-NOM to-have done this  
well]]  
well  
“Jon believes Harald to seem to me to have done this well.”
- b. \*Jón        telur    [Haraldur<sub>1</sub>        virðast mér [t<sub>1</sub>        hafa    gert this  
Jon-NOM believes Haraldur-NOM to-seem me-DAT to-have done þetta  
well]]  
well  
“Jon believes Harald to seem to me to have done this well.”

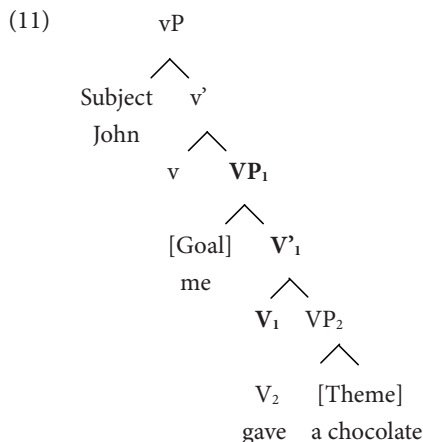
- (9) *Raising over the experiencer in Italian –Ok = High Appl*  
*Gianni<sub>1</sub> non gli sembra [t<sub>1</sub> fare il suo dovere]*  
 Gianni not him-DAT seemed do the his duty  
 ‘Gianni seemed to him not to do his duty.’

McGinnis (2001, 2004) suggests that this contrast follows if the experiencer construction is a low applicative in Icelandic but a high Applicative in Italian. Since High Appl is a phase, the embedded subject in Italian raising constructions can move to the outer specifier of a HighApplP. It can then move to the matrix subject position. On the other hand, if the raising construction in Icelandic is a low applicative, the embedded subject has to move directly to the matrix subject position because LowApplP does not have a phase-EPP feature. In this case, the experiencer serves as an intervener for the movement.

### 3.2 Causatives as “applicatives”

The previous subsection demonstrated that High/Low applicative constructions can be extended to another type of construction, i.e., raising constructions.<sup>2</sup> In fact, there is a precedent to extend the applicative construction analysis to another kind of construction. Marantz (1993) analyzes double object constructions such as (10) as basically high applicative constructions in which the extra verbal head (=V<sub>1</sub>) appears as the sister of VP (=VP<sub>2</sub>), as in (11).<sup>3</sup>

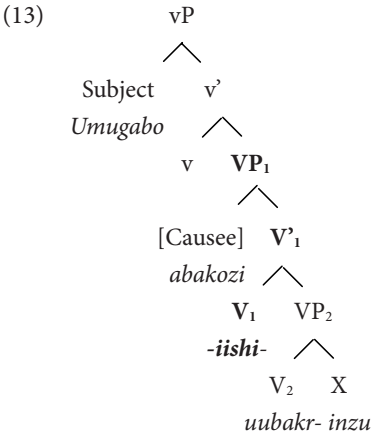
- (10) John gave me a chocolate.



Marantz (1993) applies the structure proposed in (11) to complex predicates including causative structures, with the extra V introducing another argument, namely a causee. The motivation for Marantz’s (1993) proposal is that morphologically derived causatives in languages like Kinyarwanda appear to have a similar construction to double object constructions with applicative affix or an affix verb. As in (12) an affected object

and the causee in Kinyarwanda appear as the higher object. From this, Marantz (1993) analyzes the phrase structure of an affixal causative like Kinyarwanda in (12b) as the one in (13).

- (12) a. *Umugóre a -rá-som -er -a umuhuûngu igitabo.*  
Woman subAGR-pres-read-APPL-aspect boy book  
‘The woman is reading the book for the boy.’
- b. *Umugabo a -r -uubak -iish -a abakozi inzu.*  
man subAGR-pres-build -CAUSE-aspect workers house  
‘The man is making the workers build a house.’



Given this structure, Marantz (1993) argues that only difference between double object construction and the causative construction is the type of the extra V, V<sub>1</sub> in (13). On the one hand, double object constructions have the applied verb, while causative constructions have the causative affix on the other.<sup>4</sup>

Marantz’s (1993) claim is supported by Pesetsky (1995) and Bruening (2001), who point out that the IO in a double object construction in English receives a causative reading as in (14a). That is, the goal in the double object construction in (14a) is treated as an affected object. The dative construction of the sentence in (14b) does not have a causative reading but a transferring reading, hence the sentence is awkward (e.g., Ohrle 1976). This indicates that a double object construction has an extra (null) causative verb, which the *to*-dative construction lacks.

- (14) a. The lighting gives me a headache.
- b. #The lighting gives a headache to me.

Given Marantz’s (1993) proposal, I suggest that morphologically derived causative constructions have a structural regulation similar to McGinnis’ proposal for applicative constructions. That is, just like applicative morphemes, some causative morphemes project a causative phrase as a complement of V, corresponding to low applicatives. Some take VP as their complement, corresponding to high applicatives.

## 4. Japanese long passives

Given the proposal that morphologically derived causative constructions have a structural regulation similar to McGinnis' proposal for applicative constructions, this section will show that locality constraints on A-movement exist in Japanese "applicative" constructions and that, more importantly, these constraints interact not only with phrasal structures but also with *phasal* structures.

### 4.1 Long passives in causatives

Consider the contrast in (15), which shows that Japanese causatives only allow the affected object, *daiku* in (15a), to be passivized. This indicates that the Japanese causative is not High Appl but Low Appl. The unavailability of long passive in (15b) is attributed to the intervention effect of the affected object, which we saw in Low Appl (cf. Marantz 1984 and Inoue 1976).<sup>5</sup>

- (15) a. *Daiku*<sub>1</sub> -ga t<sub>1</sub> ie -o tate -sase -rare -ta.  
carpenter-NOM house-ACC build-CAUSE-PASS-PAST  
'Carpenters were made to build a house.'
- b. \**Ie*<sub>1</sub> -ga *daiku* -ni t<sub>1</sub> tate -sase -rare -ta.  
House-NOM carpenter-DAT build-CAUSE-PASS-PAST  
Lit.: 'A house was made carpenters to build.'
- c. *Taro*-ga *daiku*-ni ie-o tate -sase -ta.  
Taro-NOM carpenter-DAT house-ACC build-CAUSE-PAST  
'Taro made carpenters build a house.'

This line of thought leads us to expect the existence of languages with morphologically derived causative constructions which allow long passive as well as short passive. As we saw in previous sections, there is an asymmetry in the availability of *long* A-movement when an element A-moves over an apparent intervener. In applicative constructions, Kinyarwanda Benefactives allow long passives in which the lower object can be passivized, stepping over the higher object while English ditransitives do not. In raising constructions, Italian allows the raising of the embedded subject over the experiencer while Icelandic does not. If this cross-linguistic contrast found in both applicative and raising constructions is due to the nature of phrasal and phasal status of applicative heads, we should see cross-linguistic contrasts in the morphologically derived causative constructions as well since I claim these involve applicatives. The paradigm is demonstrated in the table 1, where it is expected that there be cross-linguistic evidence for long A-movement causatives.



Table 1.

|                  | Applicatives | Raising   | Causative |
|------------------|--------------|-----------|-----------|
| √LongA-movement  | Kinyawanda   | Italian   | ???       |
| *Long A-movement | English      | Icelandic | Japanese  |

The prediction is borne out. Kichaga is one of those languages, Kichaga causative constructions allow not only short passives but also long passives as shown in (16) (e.g., Alsina 1992).

- (16) a. *Ndesambulro n -a -i -zrem -ilr -a mana muinda.*  
Ndesambulro Foc-AGR-pres-cultivate-CAUSE-FV child farm  
‘Ndesambulro is causing that child to cultivate the farm.’
- b. *Mana n -a -le -zrem -ilro -o muinda.*  
Child Foc-AGR-past-cultivate-CAUSE-PASS farm  
‘The child was caused to cultivate the farm.’
- c. *Muinda u -i -m -zrem -ilr -o.*  
farm AGR-pre-him-cultivate-CAUSE-PASS  
Lit.: ‘The farm is caused him to cultivate.’

Another example is Korean, which also allows both short and long passive operations in causative constructions (Youngmi Jeong p.c.). Kichaga and Korean causative constructions can be analyzed to be High Appl.

- (17) a. *Hakseng-dul-i notebook -ul sa-kae/torok ha-o-chi-et-da.*  
students-NOM notebook computer-ACC buy-CAUSE do-PASS-Past  
‘Students were caused to buy a notebook computer.’
- b. *Notebook -i haksengdul-ekey sa-kae/torok ha-o-chi-et-da.*  
Notebook computer-NOM students-DAT buy-CAUSE do-PASS-PAST  
Lit.: ‘Notebook computer was caused students to buy.’

4.2 Long passives in Japanese

In the previous section, I claimed that the unavailability of a long passive operation in Japanese morphologically derived causatives is due to locality constraints on A-movement. However, there is a possible alternative explanation of the phenomena, Case theory. One could say that due to case absorption by the passive morpheme, the higher object does not get its Case-feature checked. This would be a Case-filter violation, and the lower verb cannot check its uninterpretable Case feature, i.e., Inverse Case-filter violation as in (18).

- (18) The computer<sub>1</sub> was made students to buy t<sub>1</sub>  
 $\uparrow$ \*CASE  $\uparrow$ \*InverseCASE

Note that this analysis should not be general because there are languages which allow this long passive operation in applicative constructions as shown above. Specifically, the direct object can manifest object agreement with the verb via *pronoun incorporation*, i.e., the phenomena that the object pronoun that is indicated *OP* in the gloss can be incorporated with the verbal stem, in Chaga long passives as in (19b) (e.g. Bresnan & Moshi 1990, McGinnis 1998).

- (19) a. N -a -i -*ki-m* -lyi -i -a.  
 Foc-SP-pres-OP-OP-eat-APPL-Fanal vowel  
 'He is eating it for him/her.'  
 b. K -i -*m-lyi* -i -o.  
 SP-pres-OP-eat-APPL-pass  
 'It is being eaten for/on him/her.'

Assuming that Case property is a reflex of agreement, (19b) indicates that the Case "assigner" of the higher object, i.e., v, maintains its Case feature even after (long) passivization. Furthermore, the lower object being raised to the subject shows that it gets its case checked by T. This means that the Case-feature of the Case "assigner" of the lower object in the base position is suppressed. That is, in the case of long passives, the passivized verb retains its Case feature but the lower Case "assigner" gets its Case feature suppressed, as proposed by Ura (1996), McGinnis (1998).

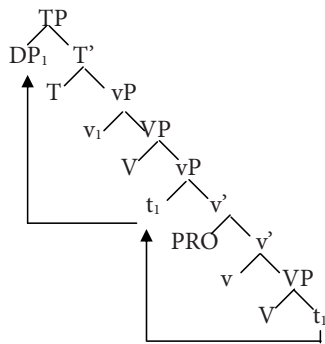
It has been shown that in Japanese, Case suppression can apply to the Case "assigner" of the lower object in a complex construction. Nishigauchi (1993) observes that long passives in Japanese do exist in control constructions, to put it more precise, aspectual verbal constructions, which involve control structures.

- (20) Kono hon-ga yomi-hajime-rare-ta.  
 this book-NOM read-begin-PASS-PAST  
 Lit.: 'This book was begun to read.'

This shows that Case suppression by Japanese passive morpheme can apply to the Case "assigner" of the lower object, penetrating the passivized verb.<sup>6</sup> If this is true, it excludes a Case-theoretic explanation of the unavailability of long passives in Japanese causatives which says that the lower verb cannot check its uninterpretable Case feature and the higher object does not get its Case-feature checked.

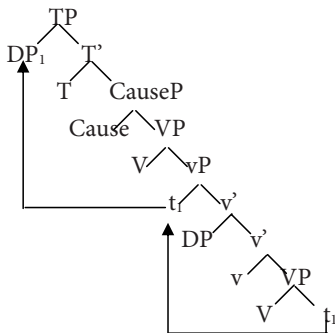
The next question is why causative constructions do not allow long passives while control constructions do. If both Japanese control and causative constructions take a verb phrase as their complement, as is generally assumed, it would be predicted that both should allow long passives as well. Given Chomsky's (1998) theory of phases, the object in the lower predicate in control constructions can move to the matrix subject position via the multiple Specs of the lower vP, which is a phase.

(21) Long passive in Japanese control predicate.



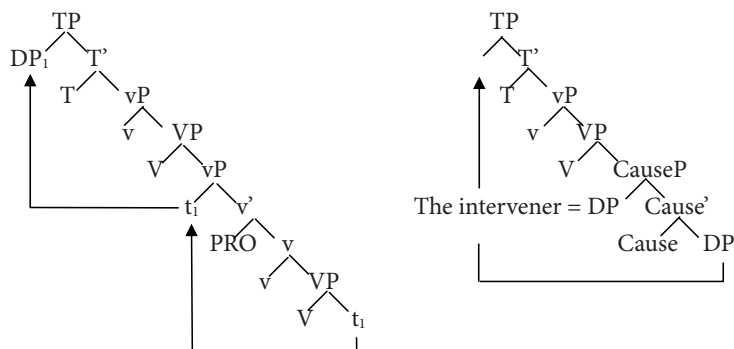
If a causative morpheme heads the lower clause like control constructions, the causative construction should allow a long passive operation the same way control constructions do, contrary to fact as shown in (22):

(22) Long passive in Japanese causative-available: *A wrong prediction*



It is therefore unclear why causatives do not allow long passives while control constructions do, if both Japanese control constructions and causative constructions head the lower clause. The current proposal can capture the difference between control and causative constructions in terms of the availability of long passive.

- (23) a. Long passive in control predicates    b. \*Long passive in causatives



As defined in (5ii), a given head is a phase if it is the sister of VP, generating an external argument. In (23a), the lower *v* is a sister of VP, generating an external argument; hence it is a phase. The object in the lower predicate in control constructions can move to the matrix subject position via multiple Spec of the lower vP. On the other hand, the fact that a long passive is not available in Japanese causative constructions follows if their structural status is similar to a low applicative construction, as suggested in the previous section. As in (23b), a causative head is not the sister of VP but the causative phrase that it projects appears as the complement of V. It is not a phase. The lower object has to move directly to Spec TP. The higher object serves as an intervener for the movement.

#### 4.3 On Kageyama (1993, 1999)

Kageyama (1993, 1999) also attempts to account for the contrast between control and causative constructions in terms of the availability of long passive, due to locality constraints on A-movement. Kageyama (1993, 1999) divides control constructions into two types, one taking a VP complement and the other a V' complement, which is schematized in (24ab), respectively.

- (24) a. [<sub>VP</sub> NP [<sub>v</sub> V [<sub>VP</sub> PRO [<sub>v</sub> V NP]]]]  
       b. [<sub>VP</sub> NP [<sub>v</sub> V [<sub>v</sub> V NP]]]

Kageyama (1993, 1999) points out that some control constructions allow long passive but some do not allow long passive.<sup>7</sup>

- (25) a. VP-complement: *-sobireru* 'miss the chance', *-okureru* 'be late',  
                               *-tukeru* 'be accustomed', *-kaneru* 'hesitate'

*Henji-o dasi-okure -ta* → \**Henji-ga dashi-okure -rare -ta*  
 reply-ACC send-be late-PAST    Reply-NOM send-be late-PASS-PAST  
 'We delayed sending the reply.' Lit. 'The reply was delayed sending.'

- b. V'-complement: *-naosu* 'do again', *-wasureru* 'forget', *-oeru* 'finish'

*Suupu-o atatame-naosi-ta* → *Suupu-ga atatame-naos-arare-ta*  
 soup-ACC heat -do again-PAST soup-NOM heat-do again-PASS-PAST  
 'He reheated the soup.' 'The soup was reheated.'

To explain the distinction in terms of the availability of long passive in control constructions, Kageyama (1993, 1999) analyzes that the control predicates that disallow a long passive operation in (25a), select VP with PRO in the specifier position as in (24a). Hence PRO serves as an intervener for the movement of the object in the lower clause to the matrix subject position. On the other hand, the control predicates that allow a long passive operation in (25b), select V' without PRO in the specifier position as in (24b). Hence no intervention effects arise. That is, according to Kageyama (1993, 1999) the availability of long passive would be derived from the presence of PRO in between the object and the matrix subject position, irrelevant of whether a given head is phasal and offers a multiple specifier for an escape hatch for A-movement.

However, Aoshima (2001) shows that, in Japanese control construction, there is a PRO in Spec vP and that it has properties of Obligatory Control PRO. Notice that Aoshima's observation can extend to Kageyama's V'-complement type verbs in (25b), the control verbs that Kageyama (1993, 1999) claims to lack PRO; Both of VP-complement and V'-complement control constructions in Kageyama's analysis need an antecedent as shown in (26a) and (26b), respectively. (27a) and (27b) indicate that this antecedent must be local, and (28a) and (28b) show that it must c-command the PRO. (29a) and (29b) show that the PRO only permits sloppy reading under ellipsis.

- (26) a. *John-ga [PRO<sub>1</sub> zibunzishin<sub>1/2</sub>\* -o home-] -sobire -ta.*  
 John-NOM himself -ACC praise -miss the chance -PAST  
 'John failed to praise himself.'
- b. *John-ga [PRO<sub>1</sub> zibunzishin<sub>1/2</sub>\* -o home-] -wasure -ta.*  
 John-NOM himself -ACC praise -forget -PAST  
 'John forgot to praise himself.'
- (27) a. *Bill<sub>1</sub>-wa [John<sub>2</sub>-ga [PRO<sub>1\*/2</sub> zibunzishin-o home-] sobire*  
 Bill -TOP John -NOM himself -ACC praise miss the chance  
*-ta -to] omotta*  
 -PAST-COMP thought  
 'Bill thought that John failed to praise himself.'
- b. *Bill<sub>1</sub>-wa [John<sub>2</sub>-ga [PRO<sub>1\*/2</sub> zibunzishin-o home-] wasure-ta*  
 Bill -TOP John -NOM himself -ACC praise forget -PAST  
*-to] omotta*  
 COMP thought  
 'Bill thought that John forgot to praise himself.'

- (28) a. [*Mary*<sub>1</sub>-*no hahaoya*]<sub>2</sub>-*ga* [*PRO*<sub>1\*/2</sub> *zibunzishin-o suisenshi-*]  
 Mary-GEN mother -NOM herself -ACC recommend  
*sobire -ta.*  
 miss the chance -PAST  
 'Mary's mother failed to recommend herself.'
- b. [*Mary*<sub>1</sub>-*no hahaoya*]<sub>2</sub>-*ga* [*PRO*<sub>1\*/2</sub> *zibunzishin-o suisenshi-*] *oe -ta.*  
 Mary-GEN mother -NOM herself -ACC recommend finish-PAST  
 'Mary's mother finished recommending herself.'
- (29) a. *Ichiro-ga* [*PRO booru-o nage*]-*sokone-ta, soshite Ken-mo soo shi-ta.*  
 Ichiro-NOM ball -ACC throw-miss-PAST and Ken-also so do -PAST  
 'Ichiro missed throwing the baseball, and Ken did too.'
- b. *Ichiro-ga* [*PRO booru-o nage*]-*naoshi -ta, soshite Ken-mo soo*  
 Ichiro-NOM ball-ACC throw-do-again-PAST and Ken-also so *shi-ta*  
 do-PAST  
 'Ichiro threw the baseball again, and Ken did too.'

All the data from (26) to (29) suggest that both of VP-complement and V'-complement control constructions in Kageyama's analysis have OC PRO as the embedded subject. Thus, the analysis here argues against the distinction made by Kageyama (1993, 1999) that some control verbs take VP with PRO and some take v' without PRO.

Then, why do verbs in (25a) prohibit long passive operation? Following Koizumi (1998) and Morita (2004), I would like to suggest that the verbs in (25a) are in fact a kind of intransitive verbs as Koizumi (1998) observes that the verbs in (25a) lack transitive usage unlike the ones in (25b):

- (30) a. \**John-ga shigoto-o okure -ta.*  
 John-NOM job -ACC be-late-PAST  
 'John was late for the job.'
- b. *John-ga shigoto-o wasure-ta.*  
 John-NOM job -ACC forget-PAST  
 'John forgot (to do) the job.'



If the verbs in (25a) are intransitive, the reason why these verbs cannot allow long passive is that they lack the small v to go with a passive morpheme (cf. Adger 2003). The (un)availability of long passive thus falls out without Kageyama's proposal.<sup>8</sup>

Taken all, Kageyama's (1993, 1999) account for the availability of long passives in Japanese control constructions, which hinges on the presence (and absence) of PRO in the embedded subject position, is untenable. I would like to conclude that PRO is always present in the control constructions in Japanese and that the phasal nature of the head v makes long passive operation available in the relevant constructions. The unavailability of long passives that some verbs show in Kageyama (1993, 1999) must stem from the intransitivity of the verb as suggested by Koizumi (1998) and Morita (2004).



In sum, the unavailability of the long passive in Japanese causatives is due to locality constraints on A-movement. Furthermore, these locality constraints on A-movement interact with *phrasal/phasal* structure as proposed by McGinnis (2001, 2004).

## 5. Implications

As investigating the (un)availability of a long passive operation in causative constructions cross-linguistically, this paper provides evidence that Japanese A-movement obeys locality constraints and especially it should interact with *phrasal/phasal* structure as McGinnis (2001, 2004) proposes for applicative constructions. It also supports Marantz's (1993) proposal that causatives and double object constructions share the same structure with the affected or indirect object as the higher object. If this is the case, it suggests that the IO sits higher than the DO in Japanese. This implication is in favor of Hoji (1985) and Boeckx & Niinuma (2004), who claim that <IO;DO> be the base order in Japanese on independent grounds. Further, Boeckx & Niinuma (2004) liken the constraints on Japanese honorification to the intervention effects in Icelandic Quirky subject construction in which Dative subjects prevent the verb from agreeing with a nominative element. In Japanese, the ditransitive verb cannot agree with the DO in honorification as in (31b) (e.g., Harada 1976). In this sentence, only the dative nominal, *Mary* is honorified. Boeckx & Niinuma (2004) attribute the failure of object honorification in (31b) to the intervention effect of the dative element in Chomsky's (1998) Agree relation as well as the intervention effects in Icelandic Quirky subject constructions in (31a).

- (31) a. *Mér fannst/\*fundust henni leiðast þeir.*  
 Me-DAT seemed 3sg/3pl her-DAT bore they-NOM  
 'I thought she was bored with them.'  
 [v DAT NOM] (Number agreement is blocked by the dative nominal.)  

- b. *\*Taro-ga Mary-ni Tanaka sensei-o go-syookai-si -ta.*  
 Taro-NOM Mary-DAT Prof.Tanaka-ACC HO-introduce-past.  
 'Taro introduced Prof. Tanaka to Mary.'  
 [v DAT ACC] (Object honorification is blocked by the dative nominal.)  


We observe a similar intervention effect in both Japanese and Icelandic constructions. As in (15b) repeated as (32a), a dative element serves as an intervener for the movement of the lower object in Japanese causatives, now analyzed as a low Appl construction. Recall that Icelandic does not allow the embedded subject to be raised to the matrix subject position over the experiencer as in (8b) repeated in (32b).

- (32) a. \**Ie<sub>1</sub> -ga daiku -ni t<sub>1</sub> tate -sase -rare -ta.*  
 House-NOM carpenter-DAT build-CAUSE-PASS-PAST  
 Lit.: 'A house was made carpenters to build.'  
 [v DAT ACC] (Passivization of Acc is blocked by the dative nominal.)  

- b. \**Jón telur [mér<sub>1</sub> virðast t<sub>1</sub> [Haraldu hafa gert þetta vel]]*  
 Jon-NOM believes me-DAT to-seem Haraldur-NOM to-have done  
 þetta vel]]  
 this well  
 'Jon believes Harald to seem to me to have done this well.'  
 [v DAT NOM] (Raising of the subject is blocked by the dative nominal.)  


Further, recall that dative elements *do not* serve as an intervener in causative constructions in Kichaga and Korean in (16) and (17), respectively, and in the raising of the embedded subject in raising constructions in Italian in (9). These cross-linguistic variations are accounted for in terms of a high/low applicative distinction.

Taken together with Boeckx & Niinuma's examples, the same intervention mechanism seems to be at work in both Japanese and Icelandic. That is, this paper confirms Boeckx & Niinuma's claim that Japanese (honorific) agreement system is not different from the (Φ-) agreement system observed in other languages. As discussed above, Boeckx & Niinuma (2004) claim that locality constraints should be sensitive to Chomsky's (1998) Agree (see also Boeckx & Jeong 2003). If so, the differences between object honorification and the passivization of causatives in Japanese discussed above are (i) that the probe of the former is a small *v* and the probe of the latter is *T*; (ii) that the latter further requires the EPP. That is, the movement of the lower object is not available because Agree relation fails due to an intervention effect.

## 6. Conclusion

Assuming morphologically derived causative constructions share the same structural status with McGinnis' (2001, 2004) applicative constructions in the spirit of Marantz (1993), this paper provides a unified explanation to the (un)availability of long passives in both causative and applicative constructions in various languages. A consequence of the current analysis is that locality constraints on A-movement exist in Japanese and that they interact with *phrasal and phasal* structures. Further, it is claimed that Japanese locality constraints, which are shown to correspond to the ones observed in Icelandic, are no different from other languages. This conclusion is in accord with Boeckx & Niinuma (2004).



## Notes

\* I thank Duk-ho An, Hiroshi Aoyagi, Ilhan Cagri, Youngmi Jeong, Heidi Harley, Chigusa Morita, and Tomokazu Takehisa for discussion. Special thanks go to Cedric Boeckx for his suggestions and encouragement. I am also grateful for feedback from the audience at Minimalist Theorizing Workshop at Indiana University, especially, Yoshihisa Kitagawa and Takeshi Munakata.

1. See Pykkänen (2001, 2002) for a detailed distinction between these two types of applicatives.
2. See Boeckx (2003) for another argument that the Icelandic experiencer construction is an applicative in a different perspective.
3. In fact, Marantz (1993) assumes that the matrix subject is generated in Spec IP. In the example (11), following recent theories of VP structure, the matrix subject is generated in the SPEC of the small *v*, which heads the VP. See Bruening (2001) for the same modification.
4. From this, Marantz (1993) further claims that double object constructions are merely one of a general class of complex predicate constructions.
5. In fact, Inoue (1976) and Kageyama (1993, 1999) have already tried to explain this fact in terms of locality effects of A-movement. However, I will show that locality constraints on A-movement have to interact with phrase and phasal structure as I argue here in order to account for the contrast between causative constructions and control constructions in terms of the (un)availability of long passives. See section 4.3 for further discussion on Kageyama's analysis.
6. Specifically, in order to explain these long passive phenomena, Nishigauchi (1993) proposes that Case-absorption requires morphological integrity. That is, in order for the passive morpheme to absorb a verb's ability to assign Case, it must be integrated with the verb. Given this, in the case of (20), successive head-movement forms the complex verb i.e., *yomi-hajime-rare* (read-begin-passive). This enables the passive morpheme to absorb the Case of the verb, *yomi* (read). On the other hand, in an English counterpart of (20) the passive morpheme is attached to the matrix verb and the head of the lower verb does not move to the higher verb.

- (i) \*This book was begun to read.

The passive morpheme cannot absorb the lower verb's Case in (i). The complement of the lower verb can check its Case with the verb and hence does not move to the matrix subject position. The long passive construction is excluded.

7. Kageyama (1993, 1999) analyzes that the verbs like *-sokoneru*, 'miss' or *-akiru*, 'get tired of' do not allow long passive. However, these verbs seem to allow long passive. Especially when the relativization is involved, the long passive is totally fine.

- (i) a. *yari-sokone-rare -ta shigoto*  
do -miss -PASS-PAST business  
'the business which is unfinished'
- b. *kiki -aki -rare -ta bee-zee-emu*  
listen-get tired of-PASS-PAST background music  
'The background music which has been listened enough'

8. One might notice that this line of thought requires the verbs in (25b) that allow long passives be associated with the small *v* to go with the passive morpheme. That is, the verb

must be transitive and assign the accusative case (cf. Koizumi 1998, Morita 2004). I would like to suggest that the accusative case is assigned to the complement verb phrase. I assume that the complement verb phrase of these control constructions corresponds to clausal gerunds as in (i)

- (i) Mary remembered buying groceries.

As shown in (ii), clausal gerunds must occur at the Case position (cf. Pires 1999, 2001). It suggests that gerunds have a Case-feature to be checked just like nominals.

- (ii) a. I prefer John reading the book.  
b. John reading the book was preferred.  
c. \*It is expected John reading the book.

Furthermore, the subject clausal gerunds can be passivized but sentential subjects cannot. This is another property that clausal gerunds and nominals have in common.

- (iii) a. The children ('s) always being late shows the necessity of discipline.  
b. The necessity of discipline is shown by the children ('s) always being late.  
c. That the children are always late shows the necessity of discipline.  
d. \*The necessity of discipline is shown by that the children are always late.

Furthermore, Pires (1999,2001) points out that clausal gerunds can not tolerate extraposing like nominal subjects.

- (iv) a. \*It surprised me Mary receiving a medal.  
b. \*It surprised me the news.

These suggest that clausal gerunds have a categorical feature of N, which must be associated with a Case-feature. Therefore, if the complement verb of the control construction in (25b) is in fact gerundive, it must receive accusative case that the control predicate assigns.

Finally, notice that raising verbs cannot select clausal gerunds (cf. Pires 1999, 2001).

- (v) a. \*There seems being a man in the room.  
b. \*John appears liking Mary.

It is thus plausible that the two types of predicate in (25) select a different type of verb phrases as its complement; the control predicate in (25b) takes a gerundive complement. On the other hand, "Raising" verbs in (25a) probably take a Case-less phrase that corresponds to infinitivals that raising verbs can select. Especially, in Romance languages, raising verbs take infinitivals in the form of "bare" verb phrases. We could therefore regard the complement of "Raising" verbs in (25a) as this type of infinitival.

## References

- Adger, D. 2003. *Core Syntax: A minimalist approach*. Oxford: OUP.  
Alsina, A. 1992. On the argument structure of causatives. *Linguistic Inquiry* 23: 517–555.  
Aoshima, S. 2001. Mono-clausality in Japanese obligatory control constructions. Doctoral research paper, University of Maryland, College Park.  
Baker, M. 1988. Theta theory and the syntax of applicatives in Chichewa. *Natural Language and Linguistic Theory* 6: 353–389.  
Barss, A. and Lasnik, H. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17: 347–354.  
Boeckx, C. 2003. Intricacies of Icelandic agreement. MS. Harvard University.

- Boeckx, C. and F. Niinuma. 2004. Conditions on agreement in Japanese. *Natural Language and Linguistic Theory* 22: 453–480.
- Boeckx, C. and M. Jeong. 2003. The fine structure of intervention in syntax. In *Issues in Current Linguistic Theory: A festschrift for Hong Bae Lee*, C. Kwon and W. Lee (eds), 83–116. Seoul: Kyungchin.
- Bresnan, J. and L. Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21: 147–185.
- Bruening, B. 2001. QR obeys superiority: frozen scope and ACD. *Linguistic Inquiry* 32: 233–273.
- Chomsky, N. 1998. Minimalist inquiries: The framework. [MIT Occasional Papers in Linguistics 15]. Cambridge MA: MITWPL.
- Harada, S.-I. 1976. *Honorifics* [Syntax and Semantics 5], M. Shibatani (ed.), 499–561. New York NY: Academic press.
- Hoji, H. 1985. Logical Form Constraints and Configurational Structures in Japanese. PhD dissertation, University of Washington.
- Inoue, K. 1976. *Henkei bunpoo to Nihongo* [Transformational Grammar and Japanese]. Tokyo: Taishukan.
- Kageyama, T. 1993. *Bunpo to Gokeisei* [Grammar and Word Formation]. Kasukabe: Hitsuji Syobo.
- Kageyama, T. 1999. Word formation. In *The handbook of Japanese linguistics*, N. Tsujimura (ed.), 297–325. Oxford: Blackwell.
- Kimenyi, A. 1980. *A Relational Grammar of Kinyarwanda*. Berkeley CA: University of California Press.
- Koizumi, M. 1998. Invisible Agr in Japanese. *The Linguistic Review* 15: 1–39.
- Marantz, A. 1984. *On the Nature of Grammatical Relations*. Cambridge MA: The MIT Press.
- Marantz, A. 1993. Implications of asymmetries in double object constructions. In *Theoretical aspects of Bantu grammar* 1, S.A. Mchombo (ed.), 113–151. Stanford CA: CSLI.
- McGinnis, M. 1998. Locality in A-movement. PhD dissertation, MIT.
- McGinnis, M. 2001. Variation in the phase structure of applicatives. In *Linguistic Variations Yearbook* 1, P. Pica and J. Rooryck (eds), 101–142. Amsterdam: John Benjamins.
- McGinnis, M. 2004. Lethal ambiguity. *Linguistic Inquiry* 35: 47–95.
- Morita, C. 2004. The structure of syntactic complex predicates in Japanese. In *Proceedings of the 6<sup>th</sup> Seoul international conference on generative grammar*, R. Kim (ed.), 203–216. Seoul: The Korean generative grammar circle.
- Nishigauchi, T. 1993. Long distance passive. In *Japanese Syntax in Comparative Grammar*, N. Hasegawa (ed.), 79–114. Tokyo: Kuroshio Syobo.
- Oehrle, R. 1976. The Grammatical Status of the English Dative Alternation. PhD dissertation, MIT.
- Pesetsky, D. 1995. *Zero Syntax: Experiencers and cascades*. Cambridge MA: The MIT Press.
- Pires, A. 1999. A minimalist approach to clausal gerunds. Doctoral research paper, University of Maryland, College Park.
- Pires, A. 2001. The syntax of gerunds and infinitives: Subjects, Case and control. clausal gerunds. PhD dissertation. University of Maryland, College Park.
- Pylkkänen, L. 2001. What applicative heads apply to. In *Proceedings of the 24<sup>th</sup> Penn Linguistics Colloquium*. M. Fox, A. Williams and E. Kaiser (eds), 197–210. Philadelphia PA: Department of Linguistics, University of Pennsylvania.
- Pylkkänen, L. 2002. Introducing Arguments. PhD dissertation, MIT.

- Rizzi, L. 1986. On chain formation. In *The Syntax of Pronominal Clitics* [Syntax and semantics 19]. H. Borer (ed.), 65–95. New York: Academic Press.
- Thráinsson, H. 1979. *On complementation in Icelandic*. New York: Garland.
- Ura, H. 1996. Multiple Feature-Checking: A theory of grammatical function-splitting. PhD dissertation, MIT.

# Null arguments and case-driven Agree in Turkish

Balkız Öztürk  
Boğaziçi University

## Abstract

Turkish exhibits both subject and object drop and has been analyzed as a pro-drop language based on the rich subject agreement morphology (Kornfilt 1984, Taylan 1986, Enç 1986, Özsoy 1988). However, it lacks agreement morphology that can license an object *pro*. This study argues that both null subjects and objects in Turkish are of *pro*-category, which are licensed independent of agreement morphology. We propose that argument drop is possible, as arguments do not have to leave their theta positions due to the lack of case-driven Agree in Turkish and thus can be licensed through thematic interpretation under the event structure. Thus, cross-linguistic variation observed in argument-drop follows from whether languages can license in-situ arguments recoverable from event structure or not.

## 1. Introduction

In the literature the availability of pro-drop in languages like Italian and Spanish is correlated with the existence of a rich agreement system, which helps recover the content of the empty argument specified with the features [+pronominal, -anaphor] (Taraldsen 1978, Chomsky 1981, Jaeggli 1982, Borer 1983, Rizzi 1986, among many others).

Huang (1984) illustrates the role of agreement in *pro*-licensing with the following Pashto example:

- (1) a. (*Jān*) *ra-z-i*.  
John DIR-come-3MSG  
'John comes.'
- b. (*z\**) *\*(mana) xwr- \*m*.  
I apple eat-1MSG  
'I eat the apple.'
- (2) a. (*Jān*) *ra-ğ-ay*.  
John ASP-come-3msg  
'John came.'

- b. *\*(ma) (mana) w\*-xwr-a.*  
 I apple PRF-eat-3FSG  
 'I ate the apple.'  
 (Huang 1984)

In Pashto, which is a rich agreement language, in present tense the verb agrees with the subject both in transitive and intransitive sentences exhibiting the nominative-accusative pattern as illustrated in (1). In past tense, however, Pashto exhibits an ergative agreement system, where the verb agrees with the subject of the intransitive and the object of transitive as in (2). In either agreement pattern, only the element, which agrees with the verb, can be dropped. Therefore, in (1b) the non-agreeing object cannot undergo pro-drop, and the same holds for the non-agreeing subject in (2b). With this contrast Huang (1984) highlights the role of agreement in *pro* licensing.

Turkish exhibits both subject and object drop as shown in (3). However, there is agreement morphology only for subjects but not for objects. Based on the subject agreement paradigm illustrated in (4), which is assumed to recover the content of null subjects, Turkish has been analyzed as a pro-drop language on a par with languages like Italian and Spanish (Kornfilt 1984, Taylan 1986, Enç 1986, Özsoy 1988, Sezer 1991).

- (3) a. *(Ben) (onu) sev-di-m.* (Turkish)  
 I him/her love-PAST-1PS  
 'I loved him/her.'
- (4) a. *(Ben) gid-iyor-um.* d. *(Biz) gid-iyor-uz.*  
 I go-PROG-1PS we go-PROG-1PPL  
 'I am going.' 'We are going.'
- b. *(Sen) gid-iyor-sun.* e. *(Siz) gid-iyor-sunuz.*  
 you go-PROG-2PS go-PROG-2PPL  
 'You are going.' 'You are going.'
- c. *(O) gid-iyor-Ø.* f. *(On-lar) gid-iyor-lar.*  
 go-PROG.-3PS go-PROG.-3PPL  
 'He/she/it is going.' 'They are going.'

In the following, we will investigate the nature of null subjects and objects in Turkish and their licensing conditions. We will propose that both null subjects and objects are pronominal elements, i.e. *pro*'s, however, agreement morphology is not the crucial category in their licensing. We will argue that the availability of subject and object drop follows from the lack of case-driven Agree in Turkish. In the absence of case-checking with higher functional categories such as TP and vP arguments remain in their theta positions, and this results in licensing of null arguments under the thematic interpretation under the event structure.

## 2. Null arguments in Turkish

As shown above Turkish allows both the subject and the object to be phonetically empty. The verb agrees with the subject, however, there is no object agreement on the verb. In the following we will first take a look at the role of agreement in subject drop then in return focus on how null objects are licensed in Turkish.

### 2.1 Null subjects

Turkish exhibits extensive subject drop.<sup>1</sup> The empty element, which occurs in the subject position, exhibits pronominal features as illustrated in (5):

- (5) *John<sub>i</sub> [ec<sub>i/j</sub> Mary-i sev-diğ-in-]i biliyor.*  
 John Mary-ACC love-NOMIN-3PS-ACC knows  
 ‘John<sub>i</sub> knows that he<sub>i/j</sub> loves Mary.’

As seen in (5) the empty category can either be associated with the matrix subject or with someone else already introduced in the discourse on a par with pronominal elements. Therefore, it is assumed that the empty subject is *pro* in Turkish. Both Kornfilt (1984) and Özsoy (1988) argue that *pro* is licensed via agreement introduced by AgrP. Thus the licensing conditions for *pro* in Turkish are assumed to be identical with the one in Italian as defined by Rizzi (1986): (a) government by a head category such as Infl, and (b) recovery of the content of *pro* by the agreement specifications on the governing head. However, as discussed in detail by Öztürk (1999, 2002) subject-drop does not always require the presence of verbal agreement in Turkish. This is observed in adjunct clauses that do not allow any verbal agreement morphology. As shown in (6) the verb in the adjunct clause does not bear any morphological agreement:

- (6) *Ben gel-ince, Ahmet gid-ecek.*  
 I come-when Ahmet go-FUT  
 ‘When I come, Ahmet will go.’
- (7) *A: John<sub>i</sub> Bill<sub>j</sub> gel-ince mi gid-ecek?*  
 John Bill come-when Q go-FUT  
 ‘Will John go when Bill comes?’
- B: Evet, pro<sub>j</sub> gel-ince, pro<sub>i</sub> gid-ecek.*  
 Yes come-when go-FUT  
 ‘Yes, he<sub>i</sub> will go when he<sub>j</sub> comes.’

As shown in (7B) *pro* in the adjunct clause is licensed without any overt agreement morphology. Crucially note that it cannot be coindexed with the matrix subject or with the matrix verbal agreement as they bear different person specifications. This implies that *pro* in Turkish does not have to be licensed via agreement unlike what has been proposed so far in the literature. However, the question is what the syntactic conditions to license subject *pro* in adjunct clauses are in Turkish. We will return

to this issue in Section 3 after we discuss the nature of null objects in Turkish in the following section.

## 2.2 Null objects

As shown above unlike subjects, there is no agreement morphology for objects in Turkish. However, similar to the case of subjects, object drop is applied extensively sensitive to discourse. Then the question is: Are we also dealing with *pro*'s in the case of object drop or with some other empty category?

Huang (1984) introduces the discourse dependent argument drop strategy in languages like Chinese, which allows both subjects and objects to be null in the absence of any agreement morphology. This challenges the agreement-based pro-drop analysis for Chinese:

- (8) *(Ta) kanjian (ta) le.* (Huang 1984:533)  
 he saw he LE  
 'He saw him.'

As noticed by Huang (1984, 1987) and Xu (1986) empty categories in Chinese exhibit different properties than the null arguments found in languages like Spanish and Italian. As illustrated in (9) the empty object in Chinese receives a bound variable or sloppy identity reading:

- (9) a. *Meigeren<sub>i</sub> [piping le ziji<sub>i</sub>].*  
 everyone criticize PERF self  
 'Everyone<sub>i</sub> criticized self<sub>i</sub>.'
- b. *Zhishi Zhangsan<sub>j</sub> mei piping [e<sub>j</sub>].*  
 only Zhangsan not criticize  
 ='Only Zhangsan<sub>j</sub> did not criticize self<sub>j</sub>'  
 ≠'Only Zhangsan<sub>j</sub> did not criticize everyone<sub>i</sub>'  
 ≠'Only Zhangsan<sub>j</sub> did not criticize Zhangsan<sub>j</sub>' (Huang 1987)

Based on these properties of Chinese empty categories, Huang (1987) proposes that the empty category in Chinese is a variable bound by a null topic operator, which has the [+anaphor] feature. Thus, (9) can be considered to be on a par with (10):

- (10) *Ziji<sub>j</sub> Zhangsan<sub>j</sub> bu piping [e<sub>j</sub>].*  
 self Zhangsan not criticize  
 'Self<sub>j</sub> Zhangsan<sub>j</sub> does not criticize [e<sub>j</sub>]'

Huang proposes that Chinese is a null topic language but not a pro-drop language. He argues that there are two parameters, namely a null topic parameter observed in languages like Chinese, Korean, Japanese in the absence of agreement and also a pro-drop parameter like the one found in Italian and Spanish. In null topic languages, what licenses the empty category is the operator-variable chain, which licenses the



empty category, whereas in pro-drop languages it is recoverable through morphological agreement.

If you disregard the subject drop cases without agreement in adjunct clauses given in (6) and (7), Turkish seems to exhibit a split system at first look, where Italian-type pro-drop strategy is available for subjects but the object drop fits the null topic pattern of the Chinese-type. The immediate implication of this is that in object drop cases we are dealing with variables. Now let us take a close look at null objects in Turkish in order to figure out whether we are dealing with variables or not.

İnce (2004) discusses the pronominal nature of null objects in adjunct clauses in Turkish, which implies that what we are dealing with in the case of null objects is a *pro*:

- (11) a. *Ahmet<sub>i</sub> Hasan ec<sub>i</sub> vur-unca, ağla-ma-ya başladı.* (İnce 2004: 3)  
 Ahmet Hasan hit-when cry-INF-DAT started.  
 'Ahmet started crying when Hasan hit him.'
- b. *Eğer ec<sub>i</sub> orada bırak-ır-sa-n, kedi fare-yi<sub>i</sub> yi-yecek.*  
 if there leave-AORIST-COND-2PS cat mouse-ACC eat-FUT  
 'If you leave it there the cat will eat the mouse.'
- c. *Hasan ec<sub>i</sub> azarla-yınca, herkes<sub>i</sub> ağla-ma-ya başladı.*  
 Hasan scold-when everyone cry-INF-DAT started.  
 'When Hasan scolded (them), everyone started to cry.'

As seen in (11a), the null object in the adjunct clause can be coindexed with the embedded subject and it is coindexed with the matrix object in (11b). (11c) also highlights the non-variable nature of the empty category, since it allows only a collective reading not a distributive reading.

In simplex clauses, too, the null object exhibits pronominal features. As seen in (12) the empty object cannot be coindexed with the matrix subject, since this will be a Condition B violation given the pronominal nature of the object:

- (12) *Mary<sub>i</sub> ec<sub>\*i/j</sub> seviyor.*  
 Mary loves  
 'Mary loves him/her/it/\*herself.'

İnce (2004) also discusses some cases of simplex clauses, where he argues that the null object behaves as an anaphor, allowing sloppy identity readings. As seen in (13) the null object allows both a strict reading and a sloppy reading. This raises the question of whether we are really dealing with operator-variable constructions of the type found in Chinese:

- (13) A: *Ali<sub>i</sub> kendini<sub>i</sub> teselli etti.* (İnce 2004: 4)  
 Ali himself console did  
 'Ali consoled himself.'

- B: *Veli<sub>j</sub> de ec<sub>j/i</sub> teselli etti.*  
 Veli too console did  
 'Veli consoled (him/himself) too.'

Similar constructions are also available in Japanese:

- (14) A: *John-wa [zibun-no tegami-o] sute-ta.*  
 John-NOM self-GEN letter-ACC discard-PERF  
 'John threw out self's letters.'
- B: *Mary-mo [ec] sute-ta.*  
 Mary too discard-PERF  
 ='Mary also threw out self's letters.'  
 ='Mary also threw out John's letters.' (Otani & Whitman 1991:346)

Otani and Whitman (1991) analyzes these constructions on a par with null topic constructions in Chinese following Huang (1987). They claim that the construction in (15) is a VP-ellipsis case, where the VP is deleted after V raising takes place leaving a totally empty VP behind. Hoji (1998), on the other hand, argues against this proposal. He shows that Japanese cases cannot be analyzed as VP ellipsis. His first argument comes from locality restrictions which are active for sloppy readings in English. He shows that Japanese cases are not subject to such a restriction:

- (15) A: *John<sub>i</sub> thinks that Bill likes him<sub>i</sub>.*  
 B: *...and Mary does [e]<sub>VP</sub> too.*  
*...and Mary thinks that Bill does [e]<sub>VP</sub> too.*

In (15) the sloppy reading "Mary<sub>j</sub> thinks that Bill likes her<sub>j</sub>" is not possible in embedded context, implying that sloppy identity reading is subject to locality. Japanese, on the other hand, does not impose such a restriction on sloppy readings as evidenced by (16). Consider the context provided by Hoji (1998):

John and Mary have been competing with each other in placing their students for good teaching positions. Ordinarily, whenever John recommends John's student for a position, Mary also recommends Mary's student for the same position. Now, Bill, Mary's colleague, who used to be her student, does various things for Mary. He sometimes even recommends Mary's students on behalf of Mary so that Mary does not have to do anything (Hoji 1998: 137).

Given such a context sloppy reading is possible for null objects in embedded clauses. This implies that Japanese cases are different from VP-ellipsis cases:

- (16) (Demo) *Mary-wa<sub>i</sub> [Bill-ga ec<sub>i</sub> suisensita to] omotteita*  
 but Mary-TOP Bill-NOM recommended that thought  
*(Dakara ec zibun de-wa nani-mo sinakatta.*  
 So on.her.part anything did not do  
 'But Mary<sub>i</sub> thought that Bill recommended ec(=her<sub>i</sub> student) and  
 so she did not do anything herself.' (Hoji 1998: 137)

Hoji's second argument relies on the case that sloppy identity readings in Japanese do not require c-command. As seen in (17) sloppy reading is allowed even in the absence of c-command, unlike the case with true variables as illustrated in (18):

- (17) A: [<sub>NP</sub> *ec<sub>k</sub> mukasi John-o<sub>i</sub> osieta sensei-ga<sub>k</sub>*] *kare<sub>i</sub>*  
           years ago John-ACC taught teacher-NOM him  
           (*no koto*)-o *homete iru*.  
           (about)-ACC is.praising  
           The teacher who taught John<sub>i</sub> years ago is praising him<sub>i</sub>.  
       B: [<sub>NP</sub> *ec<sub>k</sub> mukasi Bill-o<sub>j</sub> osieta sensei-mo<sub>k</sub>*] *ec<sub>j</sub> homete iru*.  
           years ago Bill-ACC taught teacher-NOM is.praising  
           The teacher who taught Bill<sub>j</sub> years ago is praising him<sub>j</sub> too.  
 (18) \* [<sub>NP</sub> *ec<sub>k</sub> mukasi subete-no gakusei-o<sub>i</sub> osieta sensei-ga<sub>k</sub>*] *soitu<sub>i</sub>*  
       years.ago all-GEN student taught teacher-NOM guy  
       (*no koto*)-o *homete iru*.  
       (about)-ACC is.praising  
       'The teacher who taught every student<sub>i</sub> years ago is praising  
       him<sub>i</sub> or her<sub>i</sub>.' (Hoji 1998: 146)

In addition, Hoji (1998) points out that in Japanese the strict reading is available and indeed preferred over the sloppy reading even when there is an anaphor:

- (19) A: *John-ga zibun(zisin)-o suisensita*.  
       John-NOM self-ACC recommended  
       'John recommended himself.'  
       B: *Bill-mo ec suisensita*.  
       Bill-also recommended  
       'Bill recommended him(=John), too.' (Hoji 1998: 147)

The preferred reading in (19) is the strict reading, even when *zibun-zisin* is the bindee. Based on such evidence Hoji (1998) argues that Japanese constructions given in (14) cannot be analyzed on a par with Chinese constructions. He proposes that the sloppy-like interpretation in Japanese arises from the context available in discourse. If the supplied content of the empty category could correspond to *zibun* in the discourse, then a sloppy like reading becomes available owing to the concept use of the empty category. In other words, the sloppy-like reading is due to the way the content of the null argument is recovered.

Now let us return to the Turkish case shown in (13). The null object in these constructions also behaves just like the Japanese one. Compare (16) with its Turkish counterpart given in (20) uttered in an identical context:

- (20) (Ama) Mary<sub>i</sub> [Bill-in ec<sub>i</sub> öner-diğ-in-i] sandı  
 but Mary-TOP Bill-NOM recommend-NOMIN-3PS-ACC thought  
 ve kendisi hiç birşey yap-ma-dı.  
 and herself anything do- NEG-PAST  
 'But Mary<sub>i</sub> thought that Bill recommended ec(=her<sub>i</sub> student) and so she did not do anything herself.'

Given the grammaticality of (20), sloppy reading does not require locality in Turkish either. Furthermore, Turkish replicates the Japanese facts observed in (17) and (18) regarding the c-command condition on sloppy readings:

- (21) A: [<sub>NP</sub> ec<sub>k</sub> John-u<sub>i</sub> okutan öğretmen<sub>k</sub>] onu<sub>i</sub> çok övüyor.  
 John-ACC taught teacher him a lot is.praising  
 'The teacher who taught John<sub>i</sub> is praising him<sub>i</sub> a lot.'  
 B: [<sub>NP</sub> ec<sub>k</sub> Bill-i<sub>j</sub> okutan öğretmen<sub>k</sub>] de ec<sub>j</sub> övüyor.  
 Bill-ACC taught teacher too is.praising  
 'The teacher who taught Bill<sub>j</sub> is praising him<sub>j</sub> a lot too.'  
 (22) \* [<sub>NP</sub> ec<sub>k</sub> her öğrenci-yi<sub>i</sub> okutan öğretmen<sub>k</sub> onu<sub>i</sub> çok övüyor.  
 every student-ACC taught teacher he-ACC a.lot is.praising  
 'The teacher who taught every student<sub>i</sub> years ago is praising him<sub>i</sub> or her<sub>i</sub> a lot.'

Finally given an anaphoric bindee it is also possible and also preferred to have a strict reading instead of a sloppy reading in Turkish again as in the case of Japanese:

- (23) A: John bu iş için kendini önerdi.  
 John this job for self recommended.  
 'John recommended himself for this job.'  
 B: Bill de ec önerdi.  
 Bill too recommended.  
 'Bill recommended him(=John), too.'

İnce (2004) also provides evidence against VP-deletion, which is assumed to hold for null topic languages. In the so-called VP-deletion examples in Turkish, not only can the direct object be omitted, but also the indirect object and adjuncts:

- (24) Ahmet [dün sinema-da Ayşe-yi]<sub>i</sub> görmüş; ama, pro  
 Ahmet<sub>i</sub> yesterday theatre-LOC Ayşe.-ACC.saw but pro  
 gör-me-diğ-in-i e<sub>i</sub> söylüyor.  
 see-NEG-COMP-3PS-ACC says  
 'Ahmet saw [Ayşe at the theatre yesterday]<sub>i</sub>; but he says he did not see e<sub>i</sub>.'  
 (İnce 2004: 6)

Then, the empty category seems to stand for the phrases within the square brackets, which can be a good argument for VP-deletion. However, it is also possible to strand dative arguments when direct objects are deleted in Turkish:

- (25) *Ahmet kitab-ı masa-ya koymuş; Hasan da masaya koymuş.*  
 Ahmet book-ACC<sub>i</sub> table-DAT put Hasan too e<sub>i</sub> table-DAT put  
 ‘Ahmet put the book<sub>i</sub> on the table; Hasan put e<sub>i</sub> on the table too.’

(İnce 2004:6)

İnce (2004) shows that the availability of constructions like (25) argues against a VP deletion analysis for Turkish. If (25) were VP-deletion, the dative argument would also be deleted in addition to the accusative object.

Thus the examples in (20–25) all suggest that Turkish null objects cannot be analyzed on a par with Chinese type null objects. That is, an operator-variable pair is not available for null objects in Turkish. Then the question is: Given that null objects have certain pronominal features, but there is no agreement to recover them in the context, what licenses their occurrence in Turkish? This is the same question we have asked for null subjects in adjunct clauses. If both null subjects and null objects in Turkish are pronominal categories which can occur in the absence of agreement morphology unlike the case in Italian and Spanish then what syntactic mechanism is responsible for their licensing?

### 3. Thematic interpretation and pro-licensing

As shown in Section 2 null arguments in Turkish are pronominal categories. However, unlike what has been claimed in the literature licensing of these pronominal elements is independent of the presence of morphological agreement. Both null subjects and objects can occur depending on the discourse in the absence of agreement morphology.

Italian also allows null-objects with arbitrary interpretation in the absence of object agreement morphology:

- (26) *Questa musica rende [\_\_\_\_\_ allegri].* (Rizzi 1986:507)  
 this music renders happy[+PL]  
 ‘This music makes one happy.’

- (27) *Quale musica riconcilia \_\_\_\_\_ con se stessi?* (Rizzi 1986:514)  
 ‘Which music reconciles with oneself’

Rizzi (1986) shows that null objects in Italian are possible to co-occur with other overt operators as seen in (27). This suggests that the null category cannot be a variable licensed by a covert topic operator as in Chinese. If it were, then (27) would be ungrammatical, which is not the case. Thus, Rizzi (1986) concludes that the null object is a pronominal element, i.e. *pro*. However, occurrence of object *pro* does not meet the two conditions that license the occurrence of subject *pro* in Italian, as defined by Rizzi (1986): (a) government by a head category such as Infl, and (b) recovery of the content of *pro* by the agreement specifications on the governing head. Neither condition holds for object *pro*. Note that it cannot be assumed that constructions such as

(26) do not project an object, since the null object in Italian is syntactically active. As extensively discussed by Rizzi (1986) it can act as a controller, as a binder and as a subject of predication for adjunct and argument small clauses. This again raises the same question, as the one we asked for Turkish: What licenses *pro* in the absence of agreement morphology?

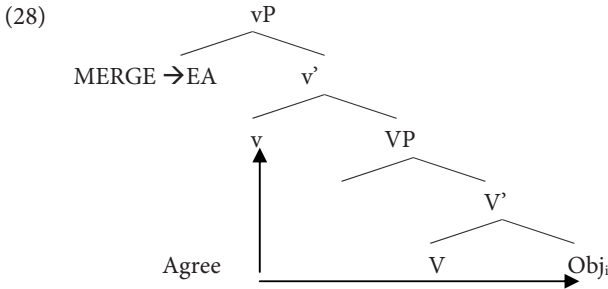
Rizzi (1986) proposes that the features defining *arb* interpretation must be transferred onto the object position. This is done by assigning *arb* to the direct theta-role in the theta-grid of the verb. If we translate Rizzi's proposal to the Neo-Davidsonian model we are adopting here – which foresees that theta roles are not part of the lexical representation of verbs, but are introduced via functional heads (Lin 2001, Borer 2005) – then the content of *pro* can only be recovered if argument drop is in situ, that is, in the theta position, as the referential index of *pro* is assigned to the theta position. This implies that empty elements are always recoverable from the event structure. Based on this we would like to propose that an argument can only be null, if it can remain in its theta position. This immediately captures why it is possible to have null *pro* in the absence of any agreement morphology as in the case of null objects in Turkish and Italian. Such a proposal, however, has immediate implications for the relationship between agreement and *pro*-licensing. If being in theta position is enough to license an empty element, then the presence of agreement morphology ceases to be what licenses *pro*-drop, since event structure will be the licenser.<sup>2</sup> This is supported by the possibility of having subject drop in languages like Turkish in the absence of agreement in adjunct clauses as illustrated in (6) – (7). Then the next question to be asked is: What does it mean for an argument to remain in situ – in its theta position? This we will discuss in the following section.

#### 4. Case-driven Agree and the functional projections TP and vP in Turkish

In languages like English DPs, which are to become arguments, are merged into their theta positions, then via Agree they form a case-checking relation with the functional categories vP and TP. Thus, arguments form a chain between their theta and case positions. In the following we will argue that such a chain formation with higher functional projections is not possible in Turkish, that is, there is no case-driven Agree. Due to the absence of case-driven Agree, arguments remain in their theta positions, which in return enables argument drop, since null elements are always recoverable through the thematic information provided in the event structure.

##### 4.1 Object case checking and vP in Turkish

Chomsky (1995) introduces vP as the locus of object case-checking. vP is also assumed to be the node where external argument is merged into the structure:



Now let us consider whether Turkish provides any motivation to propose vP as a functional projection which provides object case. We will go over the arguments in the literature given to motivate vP in English and check their applicability to Turkish.

#### 4.1.1 Burzio's generalization and Turkish

The idea behind such a configuration given in (28) where object case checking and merging of the external argument take place within the same vP projection follows from the generalization proposed by Burzio (1986):

- (29) *Burzio's generalization*: Abstract accusative case is assigned if and only if an external theta-role is assigned.

However, Burzio's generalization has been challenged cross-linguistically (Harley 1995, Pylkkänen 2002, Markman 2003, Öztürk 2004, 2005). Pseudo-incorporation of agents in Turkish also creates a challenge for Burzio's generalization:

- (30) *Ali-yi polis tutukla-dı.*  
 Ali-ACC police arrest-PAST  
 'Police arresting happened to Ali.'
- (31) a. *Polis<sub>i</sub> Ali-yi [PRO<sub>i</sub> sorgula-mak için] kasıtlı.olarak tutukla-dı.*  
 police Ali-ACC interrogate-INF for intentionally arrest-PAST  
 'The police intentionally arrested Ali to interrogate him.'
- b. *\*Ali-yi [PRO<sub>i</sub> sorgula-mak için] kasıtlı.olarak polis<sub>i</sub> tutukla-dı.*  
 Ali-ACC interrogate-INF for intentionally police arrest-past  
 'Police-arresting happened intentionally to Ali to interrogate him.'

Öztürk (2004, 2005) shows that pseudo-incorporation of agents as illustrated in (31b) does not allow control or agent oriented adverbs which target external arguments unlike the case with canonical subjects. This implies that in pseudo incorporation cases agents are not in canonical subject positions, that is, they are not functioning as "external arguments". Thus, Turkish posits a challenge for Burzio's generalization, since it is possible to assign accusative case to the object in the absence of an external argument. Given the cross-linguistic evidence, Burzio's generalization does not provide a very strong argument to motivate a vP cross-linguistically.

#### 4.1.2 Alexiadou and Anagnostopoulou (2001)

Another argument in the literature which solely relies on the case feature on vP is by Alexiadou and Anagnostopoulou (2001). They propose (32) as a cross-linguistic principle, which is illustrated by the stylistic inversion phenomenon in French given in (33):

(32) *By Spell-Out VP can contain no more than one argument with an unchecked Case feature.*

- (33) a. *Je me demande ou Marie mangera demain.*  
 I wonder where Marie will-eat tomorrow  
 'I wonder where Marie will eat tomorrow.'
- b. *Je me demande ou mangera Marie demain.*
- c. *Je me demande ou Marie mangera sa pomme.*  
 I wonder where Marie will-eat her apple  
 'I wonder where Marie will eat her apple.'
- d. *\*Je me demande ou mangera Marie sa pomme.* (Boeckx 2003: 182)

As seen in (33d) more than one argument cannot remain VP-internally. This follows from the case features on the functional heads v and T. The complex head formed by v-to-T movement cannot have active case features of both v and T. Therefore, they claim that one of the case features must be eliminated before the complex head is formed. Thus, this way they avoid multiple case-driven movement operations targeting the same head.<sup>3</sup> Their account crucially relies on the presence of a *v* node and its case-checking features.

Turkish strongly challenges the restriction provided in (32), since all arguments can remain in their theta positions. If it is assumed that negation is introduced right above all the theta role introducing functional projections, then based on the scope relations it is obvious that both the subject and the object are in situ, thus the subject takes scope below negation:<sup>4</sup>

- (34) [<sub>CP</sub>[<sub>TP</sub> [<sub>NegP</sub> [<sub>AgentP</sub> *bütün çocuk-lar* [<sub>ThemeP</sub> *o test-e* [<sub>VP</sub> *gir-me-di*]]]]]<sup>5</sup>  
 all child-PL that test-DAT take-NEG-PAST  
 'All children did not take that test.' (\*all> not, not>all)

Movement out of theta positions is possible in Turkish. However, this reverses the scope relations as seen in (35). It is possible for the subject to move to [Spec, TP], thus to precede the TP level adverb. This movement triggers subject-verb agreement. We propose that overt subject-verb agreement implies dislocation of the subject from its theta position:

- (35) *Bütün çocuk-lar (Allahtan) o test-e gir-me-di-ler.*  
 all child-PL luckily that test-DAT take-NEG-PAST-PL  
 'All the children luckily didn't take that test.' (all>not, \*not>all)



The restriction in (32) is very strictly observed in the languages discussed by Alexiadou and Anagnostopoulou (2001) due to the presence of vP with an active object case. The only way to resolve the lack of such a restriction for Turkish is to assume that there is no vP in Turkish, providing case for the object. In other words, if there is no vP level, there will be no need for a restriction in Turkish against leaving more than one argument in situ. This also immediately explains why Turkish disobeys Burzio's generalization, which also strongly relies on a relationship between the external argument and the object case exhibited within the domain of a single projection, and thus highlights the need to eliminate vP from the phrase structure of Turkish. It also implies that vP should be parametrically defined cross-linguistically and in its absence Burzio's generalization or the restriction given in (32) does not need to be obeyed.<sup>6</sup>

#### 4.1.3 vP fronting

Another argument for vP is based on the VP fronting data discussed by Huang (1993) given in (36a), which is represented in minimalist terms by Abels (2003) as in (36b). The unavailability of coindexation between *John* and *himself* comes from the fact that the trace of Bill – the external argument introduced at the level of vP – still c-commands the reflexive. This implies that the fronted constituent is the vP rather than the VP. Thus, this data identifies vP as a syntactic constituent:

- (36) a. *John said that* [<sub>VP</sub> *t<sub>i</sub> wash himself*]<sub>Bill/\*John</sub> [<sub>TP</sub> *Bill<sub>i</sub> certainly would t<sub>VP</sub>*]  
 b. *John said that* [[<sub>VP</sub> *t<sub>Bill</sub> v* [<sub>VP</sub> *wash himself*]<sub>Bill/\*John</sub>]] *Bill certainly would t<sub>VP</sub>*

It is not possible to identify such a vP level in Turkish:

- (37) a. *Her çocuk oda-sın-a git-me-di.*  
 every child room-3PS-DAT GO-NEG-PAST  
 i. 'It is not the case that every child went to his room.' (not>every)  
 ii. 'Every child is such that he didn't go to his room.' (every>not)  
 b. *Oda-sın-a git-me-di her çocuk.*  
 room-3PS-DAT GO-NEG-PAST every child  
 i. '\*It is not the case that every child went to his room.' (not>every)  
 ii. 'Every child is such that he didn't go to his room.' (every>not)

The structure in (37b) seems to be very similar to vP-fronting. The scope facts in (37b) imply that the subject has moved to [Spec, TP], as only wide scope reading for the subject is possible. If we are dealing with a vP fronting case here where the subject moves to [Spec, TP] and in return the rest of the clause is fronted then the same phenomenon should be available in embedded clauses. Consider:

- (38) a. *Ali [her çocuğ-un oda-sın-a git-me-diğ-ni-i] söyledi.*  
 Ali every child-GEN room-3PS-DAT GO-NEG-NOMIN-3PS-ACC said  
 Ali said that every child didn't go to his room.

- b. \**Ali [oda-sın-a git-me-diğ-i-ni]ni her çocuğ-un söyledi.*  
 Ali room-3PS-DAT go-NEG-NOMIN-3PS-ACC every child-GEN said  
 ‘Ali said that every child didn’t go to his room.’
- c. *Her çocuğ-un Ali [oda-sın-a git-me-diğ-in-i] söyledi.*  
 every child-GEN Ali room-3PS-DAT go-NEG-NOMIN-3PS-ACC said  
 ‘Ali said that every child didn’t go to his room.’
- d. *Ali [oda-sın-a git-me-diğ-in-i] söyledi her çocuğ-un.*  
 Ali room-3PS-DAT go-NEG-NOMIN-3PS-ACC said every child-GEN  
 ‘Ali said that every child didn’t go to his room.’

As seen in (38b) embedding (37b) in a matrix clause leads to ungrammaticality. This obviously argues against vP-fronting. That is, the structure in (37b) is an instance of NP movement, which is an instance of right adjunction to the matrix CP level. This is further supported by (38c) and (38d), where the subject of the embedded clause can be adjoined to the matrix CP. Therefore, we conclude that Huang’s test for English is not applicable to Turkish, thus it cannot be used to argue for the presence of a vP level.

Object-stranding provides further evidence for the lack of an identifiable vP level in Turkish. Unlike English it is totally possible to strand objects. Consider:

- (39) *Ben ev-i hayırkurumu-na bağışla-yacağ-ım Mehmet de araba-yı öyle*  
 I house-ACC charity-DAT donate-FUT-1PS Mehmet and car-ACC thus  
*yap-acak.*  
 do-FUT  
 ‘I will donate the house to the charity and Mehmet will do so the car.’

As seen in (39) it is perfectly possible to strand the object, when only the verb is substituted. Thus, we conclude that there is no separate vP layer in Turkish.

In summary the discussion above argues against the presence of vP as a case-assigning functional projection in the phrase structure of Turkish. Turkish does not exhibit any motivation for an identifiable vP level. It is also immune to several restrictions which lead to ungrammaticality in languages with the vP.<sup>7</sup> Therefore objects do not form a case-driven Agree with a vP and thus remain in their theta positions unlike what is observed in English. We propose that this is what enables object drop in Turkish. As objects do not leave their theta positions the content of the null object is always recoverable from the thematic information provided within the event structure. Thus there is no need for licensing via agreement morphology.

#### 4.2 Subject case-checking and TP in Turkish

In languages like English TP as a functional category is associated with EPP and the subject case (Chomsky 1995). Subjects in English undergo case-driven Agree with the T head and also move to [Spec, TP] to check the EPP feature. The presence of TP as

the location of Tense feature in Turkish is uncontroversial (Kural 1994, Kornfilt 1997, Aygen 1998, 2002, Keleşir 2001 and others). However, whether there is case-driven Agree with the T head and whether subjects have to move to [Spec, TP] for EPP or not in Turkish have not been questioned substantially. It has generally been assumed that Turkish exhibits EPP, which needs to be satisfied by the movement of subjects into [Spec, TP] and that subjects undergo case-checking with the T head (Kural 1994, Kornfilt 1997, Aygen 1998, 2002, Keleşir 2001 and others).

Alexiadou and Anagnostopoulou (1998) argue that in pro-drop languages with rich verbal agreement the head movement of the verb can check EPP. That is, EPP checking does not require MERGE XP, but MOVE X. Öztürk (1999, 2002) has also independently proposed that in Turkish the verbal agreement satisfies EPP. This proposal implies that [Spec, TP] does not have to be projected in Turkish. In other words, movement to [Spec, TP] is not required unlike English. Scope facts provide strong evidence for this. As discussed above in Turkish constituents can stay in their theta positions as illustrated by (40a). This implies that the [Spec, TP] is not projected. However, in (40b) the subject moves into [Spec, TP] to achieve wide scope triggering subject-verb agreement:

- (40) a.  $[_{TP}[_{NegP}[_{AgentP} \text{Bütün çocuk-lar}] [_{ThemeP} o \text{ test-e } [_{VP} \text{gir-me-di}]]]$   
           all child-PL that test-DAT take-NEG-PAST  
           All children did not take that test. (\*all> not, not>all)
- b.  $[_{TP} \text{Bütün çocuk-lar}_i [_{NegP}[_{AgentP} t_i] [_{ThemeP} o \text{ test-e } [_{VP} \text{gir-me-di-ler}]]]$   
           all child-PL that test-DAT take-NEG-PAST-PL  
           All children did not take that test. (all> not, \*not>all)

Passives and unaccusatives, on the other hand, are known to be typical examples of cases, where subjects move into [Spec, TP] for EPP reasons (also for case within the Government and Binding (GB) framework via case-driven A-movement) in languages like English:

- (41) a.  $[_{TP}[_{NegP}[_{AgentP}[_{ThemeP} \text{Bütün çocuk-lar}]] [_{VP}[\text{çağır}]-ıl]-ma]-dı]$   
           all child-PL invite-PASS-NEG-PAST  
           All children were not invited (\*all> not, not>all)
- b.  $[_{TP} \text{Bütün çocuk-lar}_i [_{NegP}[_{AgentP}[_{ThemeP} t_i] [_{VP}[\text{çağır}]-ıl]-ma]-dı-lar]]]$   
           all child-PL invite-PASS-NEG-PAST-PL  
           All children were such that they were not invited (all> not, \*not>all)
- (42) a.  $[_{TP}[_{NegP}[_{ThemeP} \text{Bütün çocuk-lar}]] [_{VP}[\text{gel}]-me]-di]$   
           all child-PL come-NEG-PAST  
           All children did not come (\*all> not, not>all)
- b.  $[_{TP} \text{Bütün çocuk-lar}_i [_{NegP}[_{ThemeP} t_i] [_{VP}[\text{gel}]-me]-di-ler]]]$   
           all child-PL come-NEG-PAST-PL  
           All children were such that they were not invite (all> not, \*not>all)

Both in passive and unaccusative constructions NPs which are merged at the Spec of ThemeP – the functional projection introducing the theme under the Neo-Davidsonian model assumed here – always take narrow scope with respect to negation, as illustrated in (41a) for passives and (42a) for unaccusatives respectively. This implies that subjects do not raise to [Spec, TP] in passives and unaccusatives. Such a raising is only possible to achieve wide scope interpretation, triggering subject-verb agreement as shown in (41b) and (42b). Thus, [Spec, TP] does not need to be projected at all times.

As shown above Turkish does not exhibit movement of the subjects into [Spec, TP] in active, passive and unaccusative constructions, unless there is a need to create a wide scope interpretation for the subject.<sup>8</sup> Within the GB framework, movement of subjects into [Spec, TP] is not only for EPP reasons but also for case checking, since T head is assumed to be the nominative case assigner.<sup>9</sup> However, if assumed within the GB theory, Turkish does not exhibit any motivation for movement into [Spec, TP] for case purposes. That is, there is no case-driven A-movement into [Spec, TP] *à la* GB terms and T head is not the locus of nominative case feature. If we extend this GB notion to our current framework, it implies that there cannot be an Agree relation between the T head and the subject in the theta position for case purposes, since T head does not host the case feature. Therefore, we conclude that T head does not play a role in case feature checking.

To summarize, there is no case-driven Agree with higher functional projections such as vP and TP in Turkish. This implies that all arguments can remain in their theta positions unlike the case in languages like English.<sup>10</sup> We propose that this is what enables subjects to be null in Turkish. As subjects do not need to leave their theta positions, null subjects can always be recovered through the thematic structure. That is why both in main and adjunct clauses subjects are allowed to be null in Turkish, whether there is subject agreement or not.

## 5. Concluding remarks

Since Turkish lacks case-driven Agree, both subjects and objects can remain in their theta positions. This implies that through thematic information under the event structure any of the arguments can be dropped without resort to agreement morphology. Thematic information by itself is sufficient to license null arguments.

Alexiadou and Anagnostopoulou (1998) argue that in SVO orders in languages like Italian and Spanish the subject is not in an A-position but in an A-bar position. It is the pronominal agreement which satisfies the EPP feature on T in such languages, thus there is no motivation for subjects to move into this position to check EPP. Furthermore, Alexiadou & Anagnostopoulou (2001) discuss that Italian and Spanish also allow VOS. They show that in this order the object is in a higher position than the subject. Consider the following example:

- (43) *Ha visitato [ogni soldati]<sub>i</sub> sua<sub>i</sub> madre.*  
 has visited every soldier his mother  
 'His mother visited every soldier.'

The coindexation possibilities in (43) imply that subjects can be left in their theta positions in Italian. Given the proposal above then it is expected for Italian to allow subject drop extensively. Presence of agreement on the verb could be seen due the EPP feature on T, but not as a triggerer of pro-drop. Also note that object drop in Italian is only restricted to non-referential objects (Rizzi 1986) and the one in Spanish is only possible for narrow scope indefinites (Campos 1986). It can be assumed that objects have to stay in their theta positions due to their semantic properties. Therefore, it is expected for them to undergo pro-drop being licensed by the event structure.

In languages like English, on the other hand, pro-drop is not possible even with *there* constructions with postverbal subjects, which are interpreted as taking narrow scope. Lasnik (1995) argues that such subjects also undergo movement out of the VP domain. This is evidenced by the binding facts as in (44). In order for the subject to bind the VP adjunct, it should raise to a position higher than the VP. This implies that even such subjects cannot remain in their theta positions in English, therefore, pro-drop is not expected:

- (44) *There arrived three men<sub>i</sub> on each other<sub>i</sub>'s horses.*

If this analysis is on the right track, then it can be extended to null topic languages like Chinese too. Given that all arguments can remain in their base positions in Chinese, a purely Neo-Davidsonian language under the account by Lin (2001), it is expected that all arguments can be dropped. It is true that the feature specifications of the empty categories in Chinese differ extensively from the ones found in Spanish, Italian and Turkish, however, the underlying reason for the availability of null arguments is the same, namely, their being in situ. Thus, we argue for a unified account of null argument phenomena cross-linguistically, which we believe is more advantageous with respect to acquisition, yet, we accept that feature specification of empty categories can be language specific.<sup>11</sup>

## Notes

1. Taylan (1986) states that in certain cases, depending on the discourse where the subject has a topic changing function, the occurrence of an overt pronoun as the subject is obligatory and the presence of an empty pronoun leads to an ungrammatical structure. Similarly, Enç (1986) claims that the occurrence of overt pronouns in Turkish is not optional or redundant, as in each case they have certain pragmatic functions within the discourse which need to be learnt by the speaker.
2. Note that Romero (1999) also makes a similar proposal for the licensing of null arguments in the absence of agreement morphology in languages like Turkish and Japanese. He assumes that

thematic projection is uniform and this allows recovery of the empty categories. However, he assumes that agreement is still crucial for pro-drop in languages like Italian and Spanish.

3. Boeckx (2003) presents an alternative account for the problem. He assumes an Agree operation between T and the complex head v/V formed after V-to-v movement. He argues that the ungrammaticality in (33d) is due to that the "v/V possesses a reflex of Case checking with the accusative element, that is, a valued  $\phi$ -feature set (Boeckx 2003:183)" Both the external argument, which must check its case with T and v/V, which also carries a set of valued  $\phi$ -feature compete for Agree with T. Thus, the ungrammaticality follows. If there is no object which gets into a case-checking relation with v/V, then there will not be ungrammaticality since v/V will not have a valued  $\phi$ -feature set, which will qualify it to undergo an Agree relation with T.
4. Aygen (1998) and Keleşir (2001) assume that in Turkish negation is introduced by NegP projected right above VP, which includes all arguments of the verb. When this is adopted to the Neo-Davidsonian model assumed here NegP has to be introduced right above all theta role related projections as shown in (34).
5. This test has been adopted for Turkish from Miyagawa (2001).
6. Öztürk (2004, 2005) proposes that in languages without vP the object case feature is borne on the functional projection introducing the theta role associated with the object, that is, similar to inherent case, it is introduced in the theta position. See Öztürk (2004, 2005) for the typology based on the presence or absence of vP as the object case provider cross-linguistically.
7. Chomsky (1999) argues that in addition to CP, vP also forms a phase and creates a domain subject to Phase-Impenetrability Condition. Thus, an element within the domain of vP can only move outside of it, if it moves or is merged to the edge of vP. Legate (2003) introduces three arguments for the phasehood of vP in English: (i) reconstruction of wh-phrases to the vP edge, (ii) quantifier raising in ACD constructions targeting the vP edge and (iii) parasitic gaps licensed at the vP edge. However, neither of these arguments are applicable to Turkish. Turkish does not have ACD constructions. It does not exhibit parasitic gaps either, being an object drop language. Also it is a wh-in-situ language. Therefore, it is not possible to argue for the phasehood of such a domain as vP in Turkish along the arguments proposed by Legate (2003).
8. See Öztürk (2004, 2005) for the issue of what type of elements can move into [Spec, TP].
9. See Boeckx (2004) for the proposal that Agree always requires movement of the agreeing category.
10. Öztürk (2004, 2005) discusses that Turkish is a in situ case-checking language, that is, case feature is not introduced by the functional categories TP and vP but it is available in theta positions. Due to space limitations we are not getting into the details of this proposal. See Öztürk (2004, 2005) for the discussion.
11. Chinese allows variables, Turkish, Spanish and Italian, on the other hand allow *pro*. Hoji (1998) assumes that null object in Japanese is [+referential].

## References

- Abels, K. 2003. Successive Cyclicity, Anti-locality and Adposition Stranding. PhD dissertation, University of Connecticut.
- Alexiadou, A. and E. Anagnostopoulou. 1998. Parameterizing AGR: Word order, V-movement

- and EPP checking. *Natural Language and Linguistic Theory* 16: 491–531.
- Alexiadou, A. and E. Anagnostopoulou. 2001. The subject in situ generalization and the role of case in driving computations. *Linguistic Inquiry* 32: 193–231.
- Aygen, G. 1998. Split Infl Hypothesis in Turkish. MA thesis, Boğaziçi University, Istanbul.
- Aygen, G. 2002. Finiteness, Case and Clausal Architecture. PhD dissertation, Harvard University.
- Boeckx, C. 2003. Case matters. In *Harvard Working Papers in Linguistics* 8, C. Boeckx, C. Bowerman and J. Jasanoff (eds), 159–197.
- Boeckx, C. 2004. Bare syntax. Ms., Harvard University.
- Borer, H. 1983. The projection principle and rules of morphology. In *Proceedings of NELS* 14.
- Borer, H. 2005. *Structuring Sense: An exo-skeletal trilogy*. Oxford: OUP.
- Burzio, L. 1986. *Italian Syntax*. Dordrecht: Reidel.
- Campos, H. 1986. Indefinite object drop. *Linguistic Inquiry* 17: 354–359.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 1999. Derivation by phase. In *MIT Occasional Papers in Linguistics* 18. Cambridge MA: MITWPL.
- Enç, M. 1986. Topic switching and pronominal subjects in Turkish. In *Studies in Turkish Linguistics*, D. I. Slobin and K. Zimmer (eds), 195–208. Amsterdam: John Benjamins.
- Harley, H. 1995. Subjects, Events and Licensing. PhD dissertation, MIT.
- Hoji, H. 1998. Null object and sloppy identity in Japanese. *Linguistic Inquiry* 29(1): 127–152.
- Huang, C.-T. J. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531–574.
- Huang, C.-T. J. 1987. Comments on Hasegawa's paper. In *Proceedings of the Japanese Syntax Workshop: Issues on empty categories*, Connecticut College, New London.
- Huang, C.-T. J. 1993. Reconstruction and the structure of VP: Some theoretical Consequences. *Linguistic Inquiry* 24: 103–138.
- İnce, A. 2004. Parasitic gaps in Turkish. Talk given at ECO5 Syntax Workshop, University of Maryland, College Park.
- Jaeggli, O. 1982. *Topics in Romance Syntax*. Dordrecht: Foris.
- Keleşir, M. 2001. Topics in Turkish Syntax: Clausal structure and scope. PhD dissertation, MIT.
- Kornfilt, J. 1984. Case Marking, Agreement and Empty Categories in Turkish. PhD dissertation, Harvard University.
- Kornfilt, J. 1997. *Turkish*. London: Routledge.
- Kural, M. 1994. V-to-I-to-C in Turkish. In *UCLA Occasional Papers in Linguistics*, F. Beghelli and M. Kural (eds), 1–37.
- Lasnik, H. 1995. Case and expletives revisited: On greed and other human failings. *Linguistic Inquiry* 26: 615–633.
- Legate, J. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34: 505–516.
- Lin, J. 2001. Light Verb Syntax and the Theory of Phrase Structure. PhD dissertation, University of California, Irvine.
- Markman, V. 2003. Causatives without causers and Burzio's generalization. CASTL Conference Handout, University of Tromsø, Norway.
- Miyagawa, S. 2001. EPP, scrambling, and wh-in-situ. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 293–338. Cambridge MA: The MIT Press.
- Otani, K. and J. Whitman. 1991. V-raising and VP-elipsis. *Linguistic Inquiry* 22: 345–358.

- Özsoy, S. 1988. Null subject parameter and Turkish. In *Studies on Modern Turkish. Proceedings of the third conference on Turkish linguistics*, H. Boeschoten and L. Th. Verhoeven (eds), 82–91. Tilburg: Tilburg University Press.
- Öztürk, B. 1999. Turkish as a Non-pro-drop Language. MA Thesis, Boğaziçi University, Istanbul.
- Öztürk, B. 2002. Turkish as a non-pro-drop language. In *The Verb in Turkish*, E. E. Taylan (ed.), 239–259. Amsterdam: John Benjamins.
- Öztürk, B. 2004. Case, Referentiality and Phrase Structure. PhD dissertation, Harvard University.
- Öztürk, B. 2005. *Case, Referentiality and Phrase Structure*. Amsterdam: John Benjamins.
- Pylkkänen, L. 2002. Introducing Arguments. PhD dissertation, MIT.
- Rizzi, L. 1986. Null objects in Italian and the theory of *pro*. *Linguistic Inquiry* 17: 501–557.
- Romero, J. 1999. The case of agreement. In *Papers on Morphology and Syntax*, K. Arregi, B. Bruening, C. Krause and V. Lin (eds), Cycle I, MITWPL 33: 343–367.
- Sezer, E. 1991. Topics in Turkish Syntax. PhD dissertation, Harvard University.
- Taraldsen, T. K. 1978. On the NIC, vacuous application and that-t filter. Ms., MIT.
- Taylan, E. E. 1986. Pronominal vs. zero representation anaphora in Turkish. In *Studies in Turkish Linguistics*, D. I. Slobin and K. Zimmer (eds), 209–232. Amsterdam: John Benjamins.
- Xu, L. 1986. Free empty categories. *Linguistic Inquiry* 17: 75–93.



# On tough-movement\*

Milan Rezac

University of the Basque Country (UPV-EHU) and Laboratoire Linguistique de Nantes (LLING)

## Abstract

The problématique of *tough*-movement (*Mabon<sub>i</sub> was difficult to find e<sub>i</sub>*) is addressed: (i) What gives rise to the one-to-one correlation between a non-expletive subject and a clausal complement with a gap; (ii) How does the subject interpretively link to the gap; (iii) How does the gap enter into the  $\bar{A}$ -system in its clause and why does it show anomalous properties; (iv) What determines the distribution of *tough*-movement. (i) and (ii) follow from the syntax and interpretation of non-thematic positions. The facts of (iii) suggest that the gap does not move but enters long-distance  $\bar{A}$ -Agree with C, combining earlier  $\bar{A}$  and *pro* approaches. (iv) is addressed in terms of this hypothesis and the requirement for a null pronoun to be identified.

## 1. The problem

(1) illustrates *tough*-movement TM. A group of adjectives and nouns like *easy* or *a cinch*, namely *TM triggers*, enter into the alternation exemplified by (1)a vs. (1)b/(1)c. In (1)a, TM itself, the TM trigger's [Spec, TP] is filled by a non-expletive subject, the *TM subject*. The TM subject is not selected for by the TM trigger and it is thematically interpreted in a gap in a clausal argument of the TM trigger, the *OP clause*. In the alternant, the *clausal subject construction*, the TM trigger takes a full gap-less clause as its sole argument, whether as its surface subject, (1)c, or as the associate of the *it* expletive, (1)b.

- (1) (a) The stone<sub>i</sub> is easy to lift e<sub>i</sub>/\*it<sub>i</sub> (without dropping pg<sub>i</sub>).
- (b) It is easy (for Nuwa) to lift the stone/it/\*e (\*without dropping pg).
- (c) (For Nuwa) to lift the stone is easy.
- (d) The stone<sub>i</sub> is \*possible / \*α Nuwa / \*seems [to lift e<sub>i</sub>].
- (e) The book<sub>i</sub> was easy to give him/\*John e<sub>i</sub>.

*Tough*-movement creates a problématique which I will lay out as four issues.

First, the *subject-gap correlation problem*: the presence of a non-expletive TM subject correlates one-to-one with the presence of an  $\bar{A}$ -gap in the clausal argument of the TM trigger, namely the OP clause. Neither can occur without the other. If the clausal argument lacks a gap, it must itself be the subject (or *it* subject's associate), (1)b/(1)c. If the TM subject is present, the clausal argument must have a gap, (1)a.

Second, the *subject-gap linking problem*: it is not clear how the TM subject and the gap in the OP clause relate in syntax and semantics. Selectional restrictions indicate the TM subject is thematically interpreted solely in the gap. Quantificational properties of the TM subject turn out to be interpreted solely at its surface structure position. The TM subject is in an A-position, but the gap is related to it via an  $\bar{A}$ -step.

Third, the *OP-gap problem*: even though it is clear that there is an  $\bar{A}$ -relation between the top of the OP clause and the gap in it, yielding an island-sensitive unbounded dependency with some typical  $\bar{A}$  characteristics, the relation also shows some quite anomalous properties. For example, the gap cannot be the direct object of the double object construction when the indirect object is a full DP, (1)e.

Fourth, the *selection problem* refers to the nature of the selectional and locality relations in which the TM configuration is possible, (1)d. Beside TM triggers such as *impossible* stand expressions that look like they ought to be TM triggers but are not, like (*not*) *possible*; there are non-thematic raising predicates which unlike *easy* cannot take OP clauses, like *seem*; and there are no TM triggers like  $\alpha$  in (1)d where the relation between the TM subject and the OP clause crosses an argument with structural Case (*Nuwa*), though both intervening obliques in the matrix clause and intervening DPs with structural Case in the OP clause are fine.

I outline the basic properties of TM in the next section, and then I turn to addressing these questions. Section 3 develops a predication analysis that unifies TM with another construction displaying some of its core properties, copy-raising, and the two with the interpretation of non-thematic positions in general. The mechanisms linking the TM subject to the OP-gap chain in the OP clause are those needed for the syntax and interpretation of movement anyway. The result is a fairly explanatory answer to the subject-gap correlation and linking problems; the system also correctly accounts for the similarities and differences between *tough*-movement, movement, and copy-raising. Section 4 examines the OP-gap relation within the OP clause, and proposes a hypothesis that explains some of its anomalous properties: the gap is a null pronoun which enters into long-distance  $\bar{A}$ -Agree with the C head of the OP clause, but does not undergo  $\bar{A}$ -movement. Finally, the selection problem is addressed more vaguely. Mainly, I try to sharpen the question in section 4.4, by seeing how OP clauses stack up against other “null operator” constructions and how far Browning's (1989) promising proposal that OP requires  $\phi$ -identification goes.

There is a long history to the analysis of *tough*-movement, beginning with Chomsky (1964: 61ff.). Rosenbaum (1965: 194ff.), Postal (1971), Postal and Ross (1971), Berman (1973), Brody (1993), Hornstein (2000: chapter 3), propose a movement transforma-

tion relating the gap and the TM subject, which in the case of the last two authors gives an A- $\bar{A}$ -A movement chain. Hicks (2003) adds a new twist by A-moving the TM subject out of a complex null operator headed DP, itself  $\bar{A}$ -moved within the OP clause. Lasnik and Fiengo (1974) develop an object-deletion account suggested earlier by Ross (1967) and Akmajian (1972). Williams (1983), Wilder (1991), Dalrymple and King (2000), and many others, argue that the TM subject is an argument of the TM trigger and the relation to the OP clause gap is indirect. Chomsky (1973, 1977, 1981:309ff.) argues for an  $\bar{A}$ -chain in the OP clause, and most later work assumes this. Chomsky (1981) links the TM subject to the gap through a widely-criticized complex predicate reanalysis of the in-between material at S-structure (cf. Nanni 1978, 1980 vs. Levine 1984ab).<sup>1</sup> Browning (1989) links the TM subject and the OP-gap chain by a version of Williams's (1980) Predication Theory. To account for the correlation problem, Chomsky (1986b) proposes that OP alone is not enough to identify a variable as such and "strong binding" by an explicit range-assigner, the TM subject, is required; addressing the same problem, Browning (1989) takes OP as an  $\bar{A}$  *pro* in need of identification by the TM subject. The proposals in section 3 are closest to Browning's, and could be viewed as a combination of the predication analysis with the use of Agree to identify predicate variables, independently justified by the syntax and interpretation of movement and copy-raising.

Why is *tough*-movement important? The subject-gap correlation and linking problems are a difficult, sometimes even seemingly paradoxical, problem for many theories of the syntax of long-distance dependencies (cf. Holmberg 2001:839, Hicks 2003). The linking is anomalous in that it involves an  $\bar{A}$ -step between two A-positions, and interpretation of thematic properties in one position and quantificational in another. The TM subject-gap correlation is troubling because there is a complete  $\bar{A}$ -chain (or on a different view, a *pro*) in the OP clause whose existence, unlike that of other  $\bar{A}$ -chains and other *pro*'s, depends on a separately base-generated DP, the TM subject. I aim to show that these anomalies largely follow from syntactic mechanisms that are needed anyway to derive and interpret more orthodox structures.

## 2. Basic properties of *tough*-movement

I start out from the conclusion of Berman (1973), Chomsky (1981:309ff.), Brody (1993), among others, that the TM subject is not selected by the TM trigger. The position in which it appears can be filled by the *it* expletive in the clausal subject construction (2) (I return to the absence of the *there* expletives in 3.2). It is thematically interpreted in and subject to selectional restrictions imposed on the gap in the OP clause (Lasnik and Fiengo 1974:536ff.): *the hatchet* in (3)a is interpretable either idiomatically or literally as the object of *bury*, and deviant as an argument of *be impossible* alone (3)b.<sup>2</sup> However, quantificational properties of the TM subject are not interpreted in the gap, so the two expressions in (4) are not synonymous: (4)b has

the scope reading *hard >> nothing* that (4)a lacks. Deriving these facts will be a major result of section 3.

- (2) (a) Nearly every dragon<sub>i</sub> is easy for his<sub>i</sub> foe to admire *e*.  
 (b) It is easy for his<sub>i/j</sub> foe to admire nearly every dragon<sub>i</sub>.
- (3) (a) The hatchet is impossible to bury *e* after all these years.  
 (b) #The hatchet is impossible.  
 (c) #Reconstruction is easy to dance with *e*.  
 (d) #I danced with the flight of these birds.
- (4) (a) Nothing is hard for Melvin to lift. ≠  
 (b) It is hard for Melvin to lift nothing.

(Postal 1974:356)

An alternative hypothesis that has been proposed is that the TM subject is interpreted as an argument of the TM trigger: *Yann Gerven is easy to read* is essentially *Yann Gerven is easy*, with the infinitive as an adjunct (Williams 1983, Wilder 1991). That is a hard road to take semantically (cf. Heycock 1994: 259ff.). There are no relations such as entailment between the two constructions when both are available to TM triggers, (5)a, (5)b, yet these are expected when adjunct (modifier) interpretation is involved, (5)c (I use  $x \subset y$  for  $x$  entails  $y$ ).

- (5) (a) The stone is easy [to lift *e*]  $\not\subset$  The stone is easy.  
 (b) The hatchet is easy [to bury *e*]  $\not\subset$  The hatchet is easy.  
 (c) Tartalo bought the pig [to eat *e*]  $\subset$  Tartalo bought the pig.

If the TM subject's position is non-thematic, it should allow idiom chunks selected for in the gap.<sup>3</sup> However, only some are permitted. Two alternative hypotheses seem compatible with the data: that the permitted idiom chunks are those which may head restrictive relative clauses and thus compatible with  $\bar{A}$ -movement (6) (cf. Lasnik and Fiengo 1974:542 note 4), or that they are those which can enter into control and so are not truly idiomatic (cf. Nunberg, Sag and Wasow 1994). In neither case does there appear to be a perfect match with the other diagnostic involved, relativization and control (cf. also Horn 2003: 265, 267ff.); I leave the matter here.

- (6) (a) ?Headway is easy to make on problems like these.  
 (Lasnik and Fiengo 1974:540)  
 (b) The headway that we made was insufficient. (Lasnik and Fiengo 1974:541)  
 (c) \*Tabs were easy to keep on Pohjola.  
 (d) \*The tabs that we kept on Pohjola never paid off.

Turning to the internal structure of the OP clause, some aspects are clear. The gap enters into the  $\bar{A}$ -system (Chomsky 1977, 1981, 1982, Browning 1989); I review the grounds for this conclusion in section 4.2. Browning (1989: chapter 2) and Heycock (1994: 258) assume that the OP-gap chain terminates not within the OP clause itself but rather in a maximal projection of the TM trigger, as sister to which the TM subject is base-generated. However, there is fairly straightforward evidence that the OP-gap chain does not continue beyond the OP clause. As will be reviewed in section 4.2, the OP-gap chain constitutes a weak island for *wh*-extraction from within the OP clause, (7)a. A TM trigger may take an experiencer argument external to the OP clause, as discussed below (see the structure in Figure 1 below). If OP-movement continued up to the maximal projection of the TM trigger, it would have pass this experiencer, and the experiencer's extraction should be degraded and subject to D-linking. This is not the case. (7)b for example has a reading where *easy* takes scope over *how many*, so that the question can be about the size of the group that finds exasperation easy to cause, even if its members separately do not (discussion of example (32) will make this clearer); and another compatible but independent reading where *their* is bound by *most*. These readings require scope and variable binding reconstruction respectively, not available for D-linked *wh*-phrases (Frampton 1990, Cresti 1995).

- (7) (a) \*How intelligent is John easy [to think of / regard as  $e_1$ ?]  
(cf. Chomsky 1981:311)  
(b) [For how many of their<sub>3</sub> acquaintances<sub>2</sub>]<sub>1</sub> are most people<sub>3</sub> easy  $t_1$  PRO<sub>2</sub> to  
exasperate  $e_3$ ?

The matrix of the OP clause must be non-finite, (8)d and cannot license an overt subject, (8)a, (8)b. The availability of partial control (9) shows that its subject is PRO, so restructuring is not involved (see Landau 2000, Wurmbrand 2001).<sup>4</sup> A *for*-phrase between the TM trigger and the OP clause is necessarily analyzed as an experiencer argument of the TM trigger; a correct consequence is that unlike the subject of *for-to* infinitives, the *for*+DP sequence here is extractable as in (7)b above (Lasnik and Fiengo 1974: 549). On the other hand, TM triggers in the clausal subject construction tolerate both finite complements (8)e and specified subject infinitives (8)c, so the preceding limitations are clearly part of what makes an OP clause, like the presence of a gap.

- (8) (a) \*North Vietnam is easy for there to be bombing raids over *e*.  
(Lasnik and Fiengo 1974: 549)
- (b) \*The hard work is pleasant for the rich for the poor to do.  
(Chomsky 1981: 312)
- (c) It is easy for the rich [for the poor to do the hard work].  
(Chomsky 1981: 310)
- (d) \*John is easy that anyone likes *e*. (Browning 1989: 126)
- (e) It is difficult for Bill that John won the race. (Browning 1989: 127)

- (9) (a) Gilgamesh<sub>1</sub> convinced Enkidu<sub>2</sub> that the cedars<sub>3</sub> will be fun/easy [PRO<sub>1+2</sub> to seek *e*<sub>3</sub> together<sub>1+2</sub>].  
 (b) Finn<sub>1</sub> persuaded Hengest<sub>2</sub> that a hall<sub>3</sub> would be more fun [PRO<sub>1+2</sub> to meet in *e*<sub>3</sub>].

The *for*-PP experiencer of TM triggers necessarily controls the interpretation of the PRO subject of the OP clause if it is overtly present.<sup>5</sup> This derives Lasnik and Fiengo's (1974:564 note 16) observation that full DPs in the OP clause, including the gap as an  $\bar{A}$ -trace, must be disjoint from the experiencer: the OP clause's PRO controlled by the experiencer will trigger Condition C (cf. Chomsky 1981:204ff., 1986b:109).

Consider now how the TM trigger, the *for*-PP experiencer, and the OP clause assemble. Heycock (1994:257f.) shows that the OP clause ends up adjoined to a maximal projection of the TM trigger below the attachment site of adverbs like *yesterday*, (10)b, (10)c. There is a lower maximal projection of the TM trigger which is moveable without the OP clause, (10)a.<sup>6</sup> However, there is also evidence that the OP clause starts out below the experiencer, simply because the experiencer if present obligatorily controls its PRO. Thus, I assume the OP clause originates as the complement of the TM trigger. Together, this motivates the structure in Figure 1 for *This bread was easy for Ged to bake yesterday*.

- (10) (a) [How difficult (for George)] is Janice *t* (for George) [PRO to forget *e*]?  
 (elaborating on Heycock 1994:257)  
 (b) [How difficult] were the children (?\*yesterday) to control (yesterday)  
 (Heycock 1994:257)  
 (c) The papers were tough for me (?\*yesterday) to grade (yesterday).  
 (Heycock 1994:258)

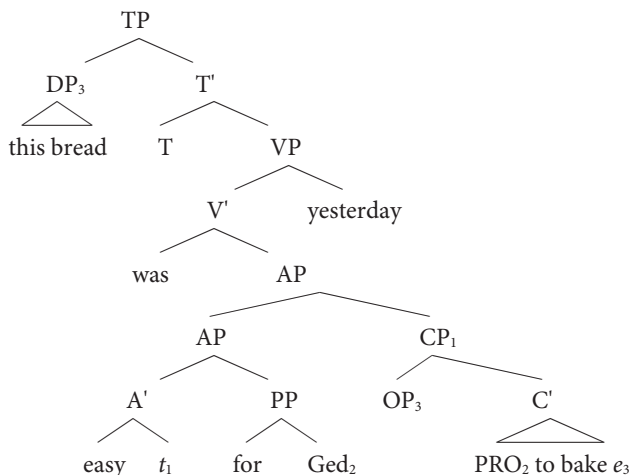


Figure 1. Structure of tough-movement: *This bread was easy for Ged to bake yesterday*.

Finally, consider the meaning of *tough*-movement, in an intuitive way. In the clausal subject construction, the clause is a propositional argument of the adjective, as in *It is tough (on Kate) that Bill solved that problem*, which says nothing about the properties of ‘the problem’ but rather that the clausal argument belongs to the class of ‘*tough (on Kate)*’ objects. Starting from this as a clue to the meaning of *tough*-movement, the meaning P of *tough for Bill to solve e* seems to be  $P = \text{‘Bill solves } x\text{’ belongs to the class of ‘tough (for Bill)’ objects}$ . The meaning of the whole *The problem is tough for Bill to solve* is then that P is predicated of ‘the problem’, which binds  $x$  within P. More specifically, it will turn out that P is an individual-level property of ‘the problem’. Moreover as noted above for (3) and (4), the TM subject is thematically interpreted in the gap in the OP clause but quantificationally in [Spec, TP] of the TM trigger. These properties, which *tough*-movement shares with copy-raising, emerge from the proposal about the syntax and interpretation of non-thematic positions given in section 3, to which I now turn.

### 3. The predication analysis

#### 3.1 Predication as interpretation of non-thematic DPs

In the next three subsections, I summarize the syntax-semantic mapping of DPs base-generated in non-thematic positions in Rezac (2004a: chapter 3, 2004b). *Tough*-movement naturally emerges, accounting for the subject-gap correlation and linking problems, and the split interpretation of thematic and quantificational properties.

A DP in a thematic position receives its interpretation by composing with its sister, (the projection of) the lexical entry of which has a corresponding  $\lambda$ -abstract, as in (11).<sup>7</sup>

- (11) Lexical entry for *love*:  $\llbracket \text{love} \rrbracket = \lambda x \in D_e. \lambda y \in D_e. y \text{ loves } x$

An DP in a non-thematic position is interpreted because its sister is a derived predicate, that is a  $\lambda$ -abstract that is introduced not by its lexical entry but by an interpretive rule (Heim and Kratzer 1998). Syntax, particularly the syntax of movement, must determine that when the sister of *the girl* in (12)a is interpreted, the  $\lambda$ -abstract introduced must bind  $x_1$  from which *the girl* has moved, not another variable such as  $x_2$ . Free binding occurs only when movement is not involved, yielding the interpretation of pronouns including resumptives, as in (12)b.

- (12) (a) The girl<sub>1</sub> is not believed by her<sub>1/2</sub> friend to have come  $t'_{1/2}$  from here.  
 (b) The girl<sub>1</sub> such that the wizard thought she<sub>1/2</sub> must have  $t$  learned her<sub>1/2</sub> magic early.

Therefore, Heim and Kratzer (1998: 109ff.) build the introduction of the trigger for  $\lambda$ -abstraction directly into the singular transformation Move. In the syntax, Move maps  $\beta$  and a designated subconstituent  $\alpha$  within it as in (13):  $\beta$  is converted to a structure  $\gamma$

sister to  $\alpha$ , where  $\gamma$  properly contains  $\beta'$ , that is  $\beta$  with  $\alpha$  replaced by the  $e$ -type object  $t_i$  (trace/variable), and the index  $i$  which identifies  $t_i$  as the open variable for  $\alpha$  within  $\beta'$ .

- (13) Move maps  $[\beta \dots \alpha_i \dots]$  to  $[\alpha [\gamma_i i [\beta' \dots t_i \dots]]]$ .

$\gamma$  in (13) is interpreted as a derived predicate by *Predicate Abstraction* in (14)a: the index ( $i$ ) is interpreted as a  $\lambda$ -operator binding a variable in its sister ( $\beta'$ ) corresponding to it, namely the indexed trace ( $t_i$ ) introduced by Move. *Functional Application* (14)b, which applies identically to derived and lexical predicates, composes a predicate with its sister by substituting the latter into the variable bound by the predicate's  $\lambda$ -abstract. A useful shorthand is to say that the predicate's sister ( $\alpha$  in (13))  $\lambda$ -binds the variable bound by the predicate's  $\lambda$ -operator (Reinhart 2000).

- (14) Interpretive rules

- (a) Predicate Abstraction (PA): Let  $\alpha$  be a branching node with daughters  $\beta$  and  $\gamma$ , where  $\beta$  dominates only a numerical index  $i$ . Then, for any variable assignment,  $a$ ,  $\llbracket \alpha \rrbracket^a = \lambda x \in D_e. \llbracket \gamma \rrbracket^{a[x/i]}$ . (Heim and Kratzer 1998: 186)
- (b) Functional Application (FA): If  $\alpha$  is a branching node and  $\{\beta, \gamma\}$  the set of its daughters, then, for any assignment  $a$ ,  $\alpha$  is in the domain of  $\llbracket \cdot \rrbracket^a$  if both  $\alpha$  and  $\beta$  are, and  $\llbracket \beta \rrbracket^a$  is a function whose domain contains  $\llbracket \gamma \rrbracket^a$ . In this case,  $\llbracket \alpha \rrbracket^a = \llbracket \beta \rrbracket^a(\llbracket \gamma \rrbracket^a)$ . (Heim and Kratzer 1998: 105)

Adopting the copy theory for traces does not modify any of the essentials, under Fox's (2002) hypothesis that copies are interpreted as definite descriptions containing a bound variable. Take the copy-theoretic structure *every girl left every girl*. Fox proposes that the quantifier of the lower copy is replaced by *the* through *Determiner Replacement* (15)b, and that the resulting definite description is interpretively linked to the higher copy through *Variable Insertion* (15)a that attaches to it the predicate  $\lambda y(y=x)$  'is identical to  $x$ ', where  $x$  is a variable name (index) bound by the higher copy. In order for this to work with the interpretation of movement, the index introduced by Variable Insertion must be the same as that introduced by Move (13), a point I return to.

- (15) Trace Conversion (Fox 2002: 67)

- (a) Variable Insertion:  $(\text{Det}) \text{ Pred} \rightarrow (\text{Det}) [\text{Pred } \lambda y(y=x)]$
- (b) Determiner Replacement:  $(\text{Det}) [\text{Pred } \lambda y(y=x)] \rightarrow \text{the } [\text{Pred } \lambda y(y=x)]$

These tools need to be modified to work with the *Compositional Theory of Movement* CTM proposed in Chomsky (2000: 101f., 2001, 2004):

- (16) CTM: Movement is not a primitive; it is a composition of (at least) the basic structure-building operation Merge and the dependency-forming operation Agree.

Under the CTM, movement is a sequence of Merge and Agree with no hard-wired link between them. CTM has the advantage of predicting the existence of structures like



TM and copy-raising, as in (17). Here the matrix subject is base-generated independently of the complete clause downstairs (17)a, but the DP it  $\lambda$ -binds is identified by the locality of  $\varphi$ -Agree, thus ruling out (17)b (cf. esp. Potsdam and Runner 2001).

- (17) (a) The shoe<sub>i</sub> seems like it<sub>i</sub>'s on the other foot.  
 (b) \*The other foot<sub>i</sub> seems like the shoes is on it<sub>i</sub>.

The issue posed by CTM and addressed in Rezac (2004a: chapter 3, 2004b), is how to constrain Merge of [Spec, HP] to base-generate a DP that  $\lambda$ -binds the goal of H's Agree, which is an independent operation that took place earlier in the derivation when H' was constructed (Rezac 2003). The leading idea is that it is Agree that transmits the index  $i$  in (13), because  $i$  is in fact just a valued  $\varphi$ -feature of a  $\varphi$ -probe, so that indices enter syntax as part of the interpretable  $\varphi$ -features of DPs. These assumptions are implemented as follows:

- (18) (a) There is an index feature [ix] which is unvalued on  $\varphi$ -probes, but valued and interpretable on DPs (cf. number).  
 (b) Variable Insertion (modified):  $(\text{Det}[\dots ix=x_n \dots]) \text{ Pred} \rightarrow (\text{Det}[\dots ix=x_n \dots]) [\text{Pred } \lambda y(y=x_n)]$

Under these assumptions,  $\varphi$ -Agree values [ix] as it does other  $\varphi$ -features, (19); in fact by the *Free Rider Principle* of Chomsky (1995: 265f., 268–70, 275), Agree by any feature of H values [ix] on H if present.

- (19)  $[_{HP} H_{[ix]} \dots DP_{[ix=n]} \dots] \rightarrow_{\text{Agree}} [_{HP} H_{[ix=n]} \dots DP_{[ix=n]} \dots]$

Agree now plays the role in triggering Predicate Abstraction that for Heim and Kratzer (1998) is played by Move (13): it yields a syntactic representation where the index of the goal of Agree is represented at the top of the constituent whose head triggers Agree.

It turns out to be further preferable to formulate Predicate Abstraction so that it is triggered by the interpretable index feature of the non-thematic DP in [Spec, HP] as in (20), rather than by the value index feature itself. This lets expletives be ignored if by hypothesis they lack interpretable index features, correctly allows non-thematic non-agreeing DPs to freely  $\lambda$ -bind as in (12)b, and obviates the problem that Agree-valued index features will be deleted prior to the application of Predicate Abstraction (see Rezac 2004a: 152ff., 2004b for discussion).<sup>8</sup>

- (20) Predicate Abstraction Rule (PA) (modified): Let  $\alpha$  be a tree dominating two sub-trees,  $\beta$  and  $\gamma$ , such that  $\beta$  has an index feature [ix=i]; then for any variable assignment  $a$ ,  $[[\alpha]]^a = \lambda x \in D_e. [[\gamma]]^{a[x/i]}(\beta)$ .

However, this approach requires a mechanism to ensure specifier-head agreement between the derived predicate H', whose head H has the Agree-valued  $\varphi$ -probe identifying the variable to be  $\lambda$ -bound within H', and the DP freely Merged into [Spec,

HP] which is to  $\lambda$ -bind it. I discuss the various possibilities in Rezac (2004b); here it suffices that a mechanism exists which results in (21), both for the present case and for independent reasons.

- (21) Match Condition: if Merge( $\alpha$ ,  $\beta$ ), then for any  $\varphi$ -feature F, the value of F on the label of  $\alpha$  and the label of  $\beta$  do not differ.

(22) illustrates how the system works in the case of movement, now a descriptive label only for an instance of the CTM. The mapping label *Syntax* is the sequence of the independent operations Agree, Merge, Trace Conversion. At interpretation, assume for concreteness that the seventh element in the variable assignment function  $a$ , that is  $a(7)$ , is *Kate*.

|                   |                                                                                                                                       |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| (22)              | $[T_{[\varphi-]} [_{VP} \text{left } Kate_{[\varphi=3sg, ix=7]}]]$                                                                    |
| →Syntax           | $[Kate_{[\varphi=3sg, ix=7]} [T_{[\varphi=3sg, ix=7]} [_{VP} \text{left } [Kate_{[\varphi=3sg, ix=7]} \text{identical.to } x_7]]]]$   |
| →Feature deletion | $[Kate_{[\varphi=3sg, ix=7]} [T_{[\varphi=3sg, ix=7]} [_{VP} \text{left } [Kate_{[\varphi=3sg, ix=7]} \text{identical.to } x_7]]]]$   |
| →PA               | $[[Kate_{[\varphi=3sg, ix=7]}]] [\lambda x. [[[_{VP} \text{left } [Kate_{[\varphi=3sg, ix=7]} \text{identical.to } x_7]]]]^{a[x/7]}]$ |
| →Lexical entries  | $Kate \lambda x. [[\lambda y. y \text{left } [Kate \text{identical.to } x]]]^{a[x/7]}$                                                |
| →FA               | $Kate \lambda x. [Kate \text{identical.to } x \text{left}]^{a[x/7]}$                                                                  |
| →FA               | $Kate \text{identical.to } Kate \text{left}$                                                                                          |
| =                 | $Kate \text{left}$                                                                                                                    |

Exactly the same mechanics apply in copy-raising as in movement.

This system ensures that all DPs base-generated in a non-thematic position as sister to a  $\varphi$ -Agreeing predicate show the core property of movement and copy-raising: the goal to which the DP is interpretively linked is identified by  $\varphi$ -Agree.

### 3.2 Syntax-semantics mapping in *tough*-movement

In *tough*-movement, the TM subject is in non-thematic [Spec, TP], sister to T' whose head has a  $\varphi$ -probe. This  $\varphi$ -probe must find a goal. If the TM trigger selects a DP argument higher than the OP clause, the  $\varphi$ -probe agrees with it, and TM cannot not result; this yields constructions of type (23)a.<sup>9</sup> *Tough*-movement is therefore confined to raising-type predicates, where there is no  $\varphi$ -intervener between the matrix T and the OP clause, (23)b. The idea now is to derive the one-to-one correlation between the TM subject and an OP clause with a gap from the properties of  $\varphi$ -Agree, and to use the theory developed above to link up the TM subject and the gap.

- (23) (a) *Springs and Autumns*<sub>1</sub> is fun  $t_1$ .  
 (b) *Springs and Autumns*<sub>1</sub> is fun to read  $t_1$ .

The subject-gap correlation emerges from the locality of  $\varphi$ -Agree under two assumptions: (i) the null operator at the top of the OP clause is a legitimate goal for  $\varphi$ -Agree, even though part of the  $\bar{A}$ -system; (ii) the impenetrability of certain CPs to  $\varphi$ -Agree is obviated. As to (i), Polinsky and Potsdam (2001) for Tsez, and Branigan and

MacKenzie (2001), Bruening (2001) for Algonquian, show that  $\varphi$ -Agree with a goal in an  $\bar{A}$ -position is possible, whether the goal stays within its own clause (at its periphery) or moves up, provided such a goal is itself capable of  $\varphi$ -Agree within its own clause (cf. Massam 1985 and work cited therein). As to (ii), English examples like (24) clearly show that full CPs can be permeable to  $\varphi$ -Agree even without the goal entering into the  $\bar{A}$ -system. I follow Polinsky and Potsdam's (2001) hypothesis that CP barrierhood to  $\varphi$ -Agree reduces to locality, but as recast in Rezac (2004a: 173ff, 2004b) in terms of  $\varphi$ -locality rather than head government. Thus if a T has no local DP goal for its  $\varphi$ -probe, it may seek one in the next lower clause, where it may encounter the following goals:

- (i) (The maximal projection of) a head  $C_\varphi$  in this clause's C-system, if this head bears lexically specified default  $\varphi$ -features, giving the appearance that the CP is a barrier to  $\varphi$ -Agree. In English,  $\varphi$ -Agree with such a CP goal triggers the insertion of the *it*-expletive.<sup>10</sup>
- (ii) A DP goal in an  $\bar{A}$ -position outside the maximal projection of any  $C_\varphi$ .
- (iii) If there is no  $\varphi$ -set in the C-system at all,  $\varphi$ -Agree reaches into the next lower [Spec, TP] or T(P), as in (24) or in the case of C-less ECM infinitives.

Simple locality determines which goal controls  $\varphi$ -Agree. Considering for example Tsez with the clausal architecture in (25),  $\varphi$ -Agree of the matrix T is predicted to take place with the closest of a *wh*-phrase, an overt C, a topic, or finally a low nominalizing head, an instance of  $C_\varphi$ , that I put in  $\text{Fin}^0$ .<sup>11</sup> Polinsky and Potsdam (2001) show these predictions are correct; two examples are given in (26).<sup>12</sup>

(24) There seem like (\*I think) there are three anthropologists at the conference.

(25) [<sub>CP</sub> wh [<sub>C</sub> C<sup>0</sup> [<sub>TopP</sub> topic [<sub>Top</sub> Top<sup>0</sup> [<sub>FinP</sub> Fin<sup>0</sup> [<sub>TP</sub> S O V]]]]]]]

(26) (a) *eni-r* [*už-ā* *magalu-n/gon* *b-āc'-ru-li*] *b/\*r-iyxo*  
 mother-DAT boy-ERG bread.III.ABS-TOP III-eat-PAST.PART-NMLZ] III/\*IV-know  
 The mother knows the boy ate the bread. (Polinsky and Potsdam 2001:610)

(b) *eni-r* [*šebi* *γ-āk'i-ru-li*] *γ-iy-x-ānu*  
 mother-DAT wh.II.ABS II-go-PAST.PART-NMLZ II-know-PRES-NEG  
 The mother does not know who left. (Polinsky and Potsdam 2001:638 note 20)

Turning to English,  $\varphi$ -Agree should be possible with an  $\bar{A}$ -goal unless blocked by an intervener. This, I propose, is what happens in *tough*-movement. Like most CPs in English, the complement of a TM trigger can have a  $C_\varphi$  that intervenes for higher  $\varphi$ -Agree and triggers *it* insertion. This gives the clausal subject construction, (27)a. OP-movement either by-passes this barrier as in Tsez, or else the C associated with OP,  $C_{OP}$ , has no inherent  $\varphi$ -features. In either case, the  $\varphi$ -features of OP itself are accessible to matrix  $\varphi$ -Agree, valuing the  $\varphi$ -probe of T, and the Match Condition requires Merge in [Spec, TP] of a subject matching the index feature of the gap. This results in the TM

construction, (27)b. Without OP-movement,  $\varphi$ -Agree with a lower DP within the OP clause is out, explaining (27)c: either because  $C_{OP}$  is a  $C_\varphi$ , or because PRO intercepts the  $\varphi$ -probe. PRO itself cannot be the goal, because it is obligatorily controlled by the matrix experiencer whether overt or covert (Epstein 1984), so further  $\lambda$ -binding by the TM subject would result in Condition B or C between it and the experiencer, as shown in (27)d.<sup>13</sup> The only case lacking a principled explanation is why the transparent CPs found in copy-raising cannot serve as the clausal complement of TM triggers, to give (27)e. This needs to be handled by selection, as must be in general both the distribution of both these clauses (available to *seem* but not *be likely*), and of  $C_{OP}$  itself, available to *impossible* but not *possible* (Brody 1993: 8f.).

- (27) (a) It is easy for the rich [ $C_\varphi$  for the poor/PRO to read these books].  
 (b) The books<sub>1</sub> are easy (for Kate) [ $OP_1 C_{OP(\varphi)}$  PRO to read  $e_1$ ].  
 (c) \*The books<sub>1</sub> are easy (for Kate) [ $C_{(\varphi)}$  PRO to read them<sub>1</sub>].  
 (d) \*Kate<sub>1</sub> is easy (for her<sub>1</sub>) [C PRO<sub>1</sub> to read the books].  
 (e) \*The books<sub>1</sub> are easy (for Kate) [(like) they<sub>1</sub> were read  $t_1$ ].

The correlation problem of *tough*-movement is thus solved because  $\varphi$ -Agree of T determines permissible [Spec, TP] objects by the Match Condition:  $C_\varphi$  as a goal determines *it*, OP as a goal determines a DP that  $\lambda$ -binds OP; no other choices converge.

The maximal projection of  $C_\varphi$  must also be responsible for ruling out (28), the analogue of which is fine in Algonquian and Tsez (cf. (26)b). In (28), where OP is not present, the maximal projection  $C_\varphi P$  blocks [Spec,  $C_\varphi P$ ] from being accessed by the matrix T's  $\varphi$ -probe. Why does  $C_\varphi P$  of an OP clause not render OP inaccessible as well? As noted, one possibility is that  $C_{OP}$ , like the C head of the complements of *seem* but not *be likely*, lacks  $\varphi$ -features; the matter is then stipulated. Suppose instead  $C_{OP}$  is in fact a  $C_\varphi$ . The contrast between OP clauses and (28) then suggests that OP but not an overt *wh*-phrase can escape  $C_\varphi(P)$  in English. Such a distinction between OP and overt  $\bar{A}$ -phrases can be drawn in various ways. Section 4 proposes that OP is really pure Agree with the gap by  $C_{OP}$ , which does not project a specifier, unlike other C's such as the  $C_Q$  of questions that triggers both  $\bar{A}$ -Agree and movement to [Spec, CP].

- (28) \*There were asked what things<sub>1</sub> there are to do  $t_1$  in Kolkhis.

An interesting consequence of the proposed syntax is that OP counts as associate of the matrix T/[Spec, TP]. This explains the impossibility of the *there*-expletive as a TM subject, (29), simply through the definiteness effect, if its OP-gap associate is definite or pronominal, e.g. Browning's (1989) *pro*; see 3.3 and 4.

- (29) (a) \*There is hard to believe  $e$  to have been a crime committed.  
 (Chomsky 1981:309)  
 (b) It is hard to believe there to have been a crime committed.  
 (Chomsky 1981:318 note 30)

The semantics of *tough*-movement is exactly like that of (copy) raising in relevant respects. Assume that OP is an  $\bar{A}$ -fronted *pro*. This serves as the goal of matrix  $\varphi$ -Agree and is bound as the predicate variable, itself ultimately binding the gap; under the assumption that the whole OP clause is the argument of the TM trigger, (30)a results. Alternatively, suppose the proposal in section 4 is correct and the gap is a null pronoun that Agrees with  $C_{OP}$  but does not move.  $C_{OP}$  is the goal of matrix T's  $\varphi$ -Agree, valuing it with the  $\varphi$ -features of the gap from which it has itself been valued; the matrix subject then  $\lambda$ -binds the gap directly, giving (30)b.

- (30) (a) *The books*  $\lambda x_1 [[x_1 \lambda x_2 [\text{PRO to read } x_2]] \text{ is easy}]$   
 (b) *The books*  $\lambda x_1 [[\text{PRO to read } x_1] \text{ is easy}]$

Thus, the syntax and semantics of movement and copy-raising sketched in the last section succeed in accounting for the subject-gap correlation and linking problems. This seems a considerable step forward, given that the tools are independently necessary to implement the Compositional Theory of Movement in the first place. A tiny part of the selection problem is accounted for as well:  $\varphi$ -locality limits TM triggers to the raising type, lacking their own DPs.

### 3.3 Base-generation of the TM subject and its consequences

A-movement and copy-raising differ in that the former involves copies, which are deleted by a copy-deletion algorithm  $\Delta$ , and the latter overt pronouns. This difference correlates with the fact that a CP boundary is crossed by  $\varphi$ -Agree in copy-raising but not in raising and other A-movement. In Rezac (2004a: 160ff., 2004b), I argue that the CP boundary blocks  $\Delta$ , though for reasons derivable from other principles. Condition C, which  $\Delta$  obviates, determines that copy-raising, where  $\Delta$  fails to apply, can use pronouns only.

- (31) (a) *Kate*<sub>1</sub> seems like [*she*<sub>1</sub>/\**the girl*<sub>1</sub>/\**Kate*<sub>1</sub> left] *copy-raising*  
 (b) *Kate*<sub>7</sub> seems [*Kate*<sub>7</sub>/\**she*<sub>1</sub>/\**the girl*<sub>1</sub> to have left] *movement*

This syntactic difference gives rise to significant interpretive differences. The non-thematic DP in both movement and copy raising is interpreted as  $\lambda$ -binding the goal identified by  $\varphi$ -Agree, which (ultimately) gives it its thematic interpretation. However, a pronoun is an *e*-type element, and thus non-*e*-type, quantificational, properties of its  $\lambda$ -binder cannot “reconstruct” into it. A copy on the other hand is a full representation, and the higher copy may be deleted, leaving quantificational properties to be interpreted in the lower copy (Sauerland 1998, 2004).

For *tough*-movement, Browning (1989) takes OP to be *pro* moved from the gap to an  $\bar{A}$ -position, while Chomsky (1982) and Cinque (1990) posit an in-situ *pro* bound from the top of the OP clause.<sup>14</sup> In either case, the OP and/or the gap are *e*-type objects. This may be derivable. There would be two options for a non-*e*-type DP corre-

sponding to the gap in the OP clause. Either it moves to the edge of the OP clause by  $\bar{A}$ -movement, or not. However, it is in fact barred from staying within the OP clause by Condition C between it and the TM subject, since copy-deletion  $\Delta$  which bleeds Condition C does not apply across CP boundaries (as copy-raising shows). If it moves instead to the edge of the OP clause, it cannot be Agreed with by the TM trigger's T as discussed for example (28) above. Therefore, the TM subject and it end up having different indices, leading to a failure of  $\Delta$  which applies only under strict identity, and thus again a Condition C violation. Only a pronoun, not subject to Condition C, is left as something that may be  $\lambda$ -bound by the TM subject.

Construing OP/gap as an *e*-type object has interpretive consequences, as in the case of copy-raising. Although the TM subject  $\lambda$ -binds the OP/gap, it should not be able to reconstruct into it for quantificational properties.<sup>15</sup> Indeed, Postal (1971, 1974: 224, 356), Lasnik and Fiengo (1974: 544ff.), Epstein (1989: 651ff.), Cinque (1990: 194 note 39), Rezac (2004a: 189f.), observe that reconstruction for scope or quantifier binding is impossible for the TM subject anywhere below its surface position, not just to within the OP clause, but also below the TM trigger and its *for*-PP experiencer. In (32) for example, the TM subject must take scope above the propositional argument of the TM trigger, not within it: what is *easy* in (32)a is *talking to x* (e.g. at a party), each *x* a single person (though there are many of them), which is quite different from *talking to many people* (at a time) being *easy*.

- (32) TM cannot scope below TM trigger
- (a) Many people are easy to talk to *e*. (Epstein 1989:651)  
 =There are many people *x*, such that it is easy to talk to *x*. (Epstein 1989: 652)  
 ≠It is easy to talk to a large group of people. (Epstein 1989:652)
  - (b) Nothing is hard for Melvin to lift *e*. (Postal 1974:356)
  - (c) Few girls would be difficult for Jim to talk to *e*. (Postal 1974:224)
- (33) TM subject cannot take scope in the OP clause
- (a) Many patients are difficult to introduce to each doctor. (\*each > many)  
 (based on Cinque 1990: 194 note 39)
  - (b) It is difficult to introduce many patients to each doctor. (each > many o.k.)
- (34) TM subject cannot reconstruct for variable binding below the experiencer
- (a) Her<sub>i</sub> work is hard to convince Judy<sub>i</sub>/[every woman in the group]<sub>i</sub> to share.
  - (b) The lyrics that she<sub>j</sub> wrote were easy for [every woman in the group]<sub>j</sub> [to sing].  
 (Rezac 2004a: 190)

The TM subject's behavior is parallel to that of copy-raising subject, which also has unambiguous scope above the matrix verb, as in (35). It is the absence of reconstruc-

tion that gives rise to the noted oddity of (35)a, which can only mean (35)b, not (35)c, the latter being the salient reading of (35)d.

- (35) (a) No one seems like he is here.      \**seem* > *no one*, *no one* > *seem*  
 (b) =No person is such that it seems like he is here.  
 (c) ≠It seems that no one is here. (o.k. if there are no people present)  
 (d) No one seems to be here. (o.k. on both readings)    *seem* > *no one*, *no one* > *seem*

The evidence of these paradigms is very specific: the non-thematic DP in both *tough*-movement and copy-raising  $\lambda$ -binds a pronoun, not a copy. Copy-raising wears this on its sleeve; for *tough*-movement it follows if the OP/gap must be pronominal, as discussed.

The syntax of *tough*-movement proposed here predicts a related anti-reconstruction effect. The TM subject is base-generated in [Spec, TP] of the TM trigger. There should therefore be no reconstruction position within T' (not just one below the TM trigger), unlike what is expected on Browning's (1989: chapter 2) proposal where the TM subject is base-generated sister to the maximal projection of the TM trigger (e.g. AP/NP). This prediction can be confirmed. Heycock (1994:262) observes that TM constructions seem like individual-level predication. This fits in with Lasnik and Fienngo's (1994:544ff.) development of Postal's (1971) observation that TM subjects must be generic rather than existential if indefinite, since this is characteristic of individual-level predication. Copy-raising subjects behave thusly as well (Heycock 1994:293f.).

- (36) TM indefinite subjects are only generic
- (a) Beavers are/a beaver is hard to kill.  
(Lasnik and Fiengo 1974: 546; generic only)
- (b) It was a pleasure to each a bunch of bananas; there are their skins.  
(Lasnik and Fiengo 1974: 546)
- (c) \*A bunch of bananas was a pleasure to eat; there are their skins.  
(Lasnik and Fiengo 1974: 546)
- (37) Individual level predication subjects are only generic
- (a) \*A building/someone was tall. (Lasnik and Fiengo 1974: 545)
- (b) Beavers are fat (\*they're over there). (Lasnik and Fiengo 1974: 546)
- (38) Copy-raising subjects are only generic
- (a) #Snow sounds/seems like it's falling on the mountain. [generic reading made salient]
- (b) Snow seems to be falling on the mountain. [existential reading possible]

- (c) Snow sounds like it must be a strange thing: hexagonal ice crystals falling out of the sky? [generic reading made salient] (Heycock 1994: 293f.)

Kratzer (1995) and Diesing (1992: chapter 2) argue that the availability of an existential reading for such indefinites depends on binding by the existential closure operator of clausal partition theories. This operator is located somewhere between T' and the VP. The absence of an existential reading for individual level predicates is taken as evidence that their subjects, unlike those of stage-level predicates, are base-generated in [Spec, TP]. The result transfers to *tough*-movement and copy-raising: there is no copy of the matrix subject where it could be bound by the generic operator, as there is in movement. Kratzer and Diesing also argue that base-generating the subject in [Spec, TP] rather than lower is what gives rise to the other properties of individual level predication.

The individual-level nature of TM predication may help in accounting for some hitherto rather mysterious restrictions on the interpretive relation between the TM subject and the OP clause. Consider the following data-set, where an analogue of each of the ungrammatical sentences would be fine if the TM trigger stood in the clausal subject construction:

- (39) (a) The man was hard for Mary to find *e* attractive/\*sick.  
(Dalrymple and King 2000: 14)
- (b) The children were difficult for us to return *e* unharmed/\*exhausted.  
(Dalrymple and King 2000: 14)
- (c) (\*The) money was tough for John to lack *e*.  
(cf. Dalrymple and King 2000: 14)
- (d) \*That expensive dress was easy for Mary to want *e*.  
(Dalrymple and King 2000: 14)
- (e) \*The hardcover edition was hard for the teacher to prefer *e*.  
(Dalrymple and King 2000: 14)
- (f) Your cousin is difficult for me to like *e*. (Dalrymple and King 2000: 14)
- (g) \*John is illegal to talk to *e*. (Chomsky 1986b: 113)
- (h) Some plants are illegal to grow *e* in Illinois.
- (i) John is impossible/\*not possible/easy/\*feasible to please *e*. (Brody 1993: 9)

Some of these like (39)i seem to be irreducible cases of selection for the OP clause, so that *possible* is simply not a TM trigger; see section 4.4. However in others such as (39)a some property of the OP clause or its relationship to the TM subject must be the relevant factor. Dalrymple and King (2000: 14f.), discussing the conclusions of Nanni (1978), conclude from their examples that the TM subject is required to be in a volitional or intentional relation to the predicate (cf. also Kim 1995).<sup>16</sup> This however



is surely incorrect; Hicks (2003) gives (40) as a demonstration of the lack of intentionality/volitionality on the part of the TM subject.

- (40) (a) This mountain is difficult to walk up while carrying such a large and cumbersome rucksack.  
 (b) That Jo wears size 9 shoes is difficult to believe.  
 (c) The hatchet is hard to bury after long years of war.

(Hicks 2003: 14f., (40)c from Berman 1973)

Limitations arising from the individual-level nature of the predication seem a better bet, although it remains to be seen how far it formally accounts for the dataset (39).<sup>17</sup>

### 3.4 Summary

The mechanics of the syntax and interpretation of non-thematic positions given above unify movement, copy-raising, and *tough*-movement. All three constructions instantiate the sequence of  $\varphi$ -Agree by T and Merge of non-thematic [Spec, TP] that  $\lambda$ -binds the goal of T's Agree. Differences derive from copy deletion, binding theory, and the options available for externalizing the  $\varphi$ -features of a CP-internal DP to make them accessible for higher  $\varphi$ -Agree. The mechanism resolves the central problem of *tough*-movement: the correlation and link between the TM subject and the OP clause's gap. Copy-raising and *tough*-movement come out as virtually identical instantiations of the mechanics, their difference being that an  $\bar{A}$ -relation is required to make a DP within an OP clause accessible to higher  $\varphi$ -Agree, while the CPs of copy-raising make accessible their [Spec, TP]/T directly.

The idea that copy-raising and *tough*-movement should be assimilated has a clear antecedent in Massam (1985: chapter 3). In terms of the specific mechanics that allows such cross-clausal constructions, all accounts share the notion that the Agreed-with DP must be sufficiently local to the next higher  $\varphi$ -probe, whether this is formulated in terms of  $\varphi$ -intervention, government (which carves out a local neighborhood of visibility around a probe, Massam 1985, Potsdam and Polinsky 2001), or phase-edges (which carve out a local neighborhood around a designated lower barrier, Branigan and MacKenzie 2001, Bruening 2001, Svenonius 2004). The  $\varphi$ -intervention approach here seems to have an easier time dealing with situations where the DP controller of cross-clausal  $\varphi$ -Agree is deeply embedded within its clause, as in (24). It also has the advantage of assimilating cross-clausal locality in  $\varphi$ -Agree to clause-internal locality, where  $\varphi$ -intervention not reducible to phasehood seems to play a crucial role (McGinnis 1998, Anagnostopoulou 2003, Béjar and Rezac 2003).

The use of  $\varphi$ -agreement for the transmission of an index is partly inspired by Browning (1989: chapter 2). For her, predication (of which  $\lambda$ -binding is an implemen-

In discussing  $\phi$ -Agree, Chomsky (2000: 124, 126) takes it to be an operation that does not represent the interpretable features of the goal at the target, unlike in Chomsky (1995: 272ff.), but rather as the valuation uninterpretable features which later delete.<sup>18</sup> Agree therefore does not create any permanent representation of the goal at the target's position; dependencies are formed "at a distance" without phrase-structural modifi-

cation. The reasons lie in the inertness of  $\varphi$ -agreement for all syntactic and semantic diagnostics such as binding, scope, or control, demonstrated by Lasnik (1999: chapters 6, 8) from paradigms like (44) (and later Jónsson 1996: 209 for Icelandic and Potsdam and Polinsky 2001: 620 for Tsez). For discussions of this change and its ramifications, and the arguments that bear on it, see Watanabe (2000), Boeckx (2002), Lopez (2002), Lasnik (2002), Rezac (2004a: chapter 4). I adopt it forthwith.

- (44) (a) Several runners seem to each other  $t_i$  to be likely to win the race.  
 (b) \*There seem to each other to be several runners likely to win the race.

Chomsky (2000: 109, 128, 149 notes 91, 92) suggests that  $\bar{A}$ -dependencies use the same basic mechanism as A-dependencies: for the *wh*-system, this would be Agree by a [Q] probe with a matching interpretable [Q] and an activation [wh] features on the goal, with the relativized minimality effect of  $\bar{A}$ -interveners arising as a defective intervention effect of the interpretable [Q] features on *wh*-phrases. Adger and Ramchand (forthcoming) propose that as for  $\varphi$ -Agree, there are constructions which involve pure  $\bar{A}$ -Agree with no corresponding movement. This is what I will suggest for the OP-gap relation here.

For some  $\bar{A}$ -relations such as those involving *wh* or focus, pure Agree might be precluded. For example, the semantics of a *wh*-word might be such that it must take a proposition-turned-question as its second argument, much as a quantifier must a predicate: see Romero (1997), Hagstrom (1998), and Rullmann and Beck (1998) for some recent analyses. On the opposite end of the scale are relative clauses, where all that is ultimately needed for the relative clause to be interpreted with its head  $\lambda$ -binding the gap is a  $\lambda$ -operator at its top binding the gap in it, and that is inserted by Predicate Abstraction at LF. Resumptive relatives in particular need not use any syntactic mechanism at all to establish dependencies: this is the case for Irish resumptive relatives on the analysis of McCloskey (2002) and for English *such that* relatives on the Montagovian analysis (Dowty, Wall and Peters 1985: 211ff., Heim and Kratzer 1998: 106ff.).

In the following sections, I will consider what the OP-gap relation in TM OP clauses looks like from this perspective. The basic idea to keep in mind is that it might be analyzed as follows:

- (i) The  $C_{OP}$  at the top of the OP clause has an  $\bar{A}$ -probe, whose  $\bar{A}$ -Agree is responsible for the set of  $\bar{A}$ -properties classically diagnosing OP-movement;
- (ii) This  $\bar{A}$ -Agree alone transmits the index feature identifying the goal to be  $\lambda$ -bound;
- (iii) The goal is a pronoun (see section 3.3 for why) with a feature that makes it an  $\bar{A}$ -goal;
- (iv) The goal itself stays in-situ, with no representation at the top of the OP clause.

This hypothesis makes three predictions about OP clauses. First, there is a  $C_{OP}$ -gap relationship stemming from  $\bar{A}$ -Agree, as conclude Chomsky (1977, 1981, 1986ab) and others. Second, the gap behaves as an undisplaced *pro* (albeit with an  $\bar{A}$ -feature), the analysis of Chomsky (1982) and Cinque (1990). Third, there is no interpretable repre-

sensation of the gap at the top of the OP clause. Various quirks in the behavior of OP clauses suggest that they fit this description, unlike other  $\bar{A}$ -structures, including those classically analyzed as null operator structures like infinitival relatives. This inquiry thus addresses the OP-gap problem.

Before proceeding, it must be clarified how  $\bar{A}$ -Agree interacts with the system developed in section 3. It suffices to assume that  $C_{OP}$  has an unvalued index ([ix]) feature, beside whatever other features it may have. The *Free Rider Principle* proposed in Chomsky (1995:265f., 268–70, 275), which ensures that the Agree by any probe values all the features it can of its head, is somewhat stronger a requirement. There is independent evidence that  $\bar{A}$ -Agree entails  $\varphi$ -Agree. In Kilega for example, the verb that raises to  $C^0/Fin^0$  registers two separate sets of  $\varphi$ -features: one tracking the subject (glossed SA), and one the *wh*-phrase if there is one (glossed CA), as in (45)a (Kinyalolo 1991). Similarly in Passamaquoddy,  $\bar{A}$ -movement can trigger a special  $\varphi$ -agreement morphology on every verb it crosses, distinct from and independent of regular  $\varphi$ -Agree (Bruening 2001:206ff.). Interestingly, this morphology tracks DPs which can never control regular  $\varphi$ -Agree, like the secondary objects of ditransitives (Bruening 2001:207 and note 6); in (45)b *ac* is the regular  $\varphi$ -Agree of *v* controlled by the primary object, and *ih* the  $\varphi$ -morphology that tracks specifically  $\bar{A}$ -movement across a verb.

- (45) (a) *Bikí bi-b-á-kás-íl-é* *pro mwámi mu-mwílo?*  
 VIII.what VIII.CA-II.SA-ASP-give-ASP-FV II.they I.chief XVIII-III.village  
 ‘What did they (those women) give the chief?’ (Carstens 2003:408)
- (b) *Nihiht nit akom<sub>1</sub> pro<sub>2</sub> kisi-mil-ac<sub>2</sub>-ih<sub>1</sub>.*  
 these.OBV.PL that snowshoe.OBV.PL 3.SG.FPERF-give-3.CONJ-PART.OBV.PL  
 ‘These are the snowshoes that he gave her.’ (Bruening 2001:207)

## 4.2 $\bar{A}$ -relations in the OP clause

There is substantial evidence that the gap in the OP clause enters into the  $\bar{A}$ -system.<sup>19</sup> First, the gap is subject to all islandhood conditions such as the opacity of adjuncts, as illustrated in Chomsky (1977) and Browning (1989). Of particular relevance here are *wh*-islands:<sup>20</sup>

- (46) ??John is fun for us to find out how to annoy *e*. (Browning 1989:9 note 15)

Within the limits thus imposed, the OP-gap relation is unbounded: the gap may be indefinitely embedded across any number of clausal boundaries and A-positions. This is an idealization in many respects; parameters of degradation are the depth of embedding, intervening finiteness, and subject/object asymmetries, the last of which I return to in section 4.3.3. Keeping to object gaps, we have:

- (47) Embedded gaps in sequences of infinitivals  
 (a) The books are easy/difficult to convince people to read *e*.  
 (Chomsky 1981:310, 314)

- (b) These papers were easy for me to get someone to sign *e*. (Heycock 1994:257)
- (c) The coat was difficult to persuade René to wear. (Nanni 1980:571)

(48) Gaps across tensed clause boundaries

- (a) \*John is easy to demonstrate that Bill killed (him).  
(Lasnik and Fiengo 1974:551)
- (b) This book is difficult to convince people/anyone that they ought to read *e*.  
(Chomsky 1981:314 as “more or less acceptable” though less than an infinitival example).
- (c) ?This boulder would be easy for me to claim that I had lifted *e*.  
(Heycock 1994:260)
- (d) Mary is tough for me to believe that John would ever marry *e*.  
(Kaplan and Bresnan 1982)
- (e) %Mary is hard for me to believe Leslie kissed *e*.  
(Dalrymple and King 2000:16)
- (f) That kind of mistake is hard to realize you’re making *e*. (Calcagno 1999)

Parasitic gaps are licensed by OP-gap, (49) (Chomsky 1982, 1986ab). I will not use parasitic gaps further, as their analysis continues to pose mysteries (see Browning 1989: chapter 3, Cinque 1990: chapter 3, Nissenbaum 2001, and the articles in Culicover and Postal 2001).

- (49) Cernunnos<sub>i</sub> was probably not easy [OP<sub>i</sub> to poke *e*<sub>i</sub> [without offending *pg*<sub>i</sub>]].

The OP clause is a barrier to further extraction out of it, as expected if headed by the top of an  $\bar{A}$ -chain. There are superficial counter-examples such as (50)a, which all involve D-linked *wh*-phrases whose gap must moreover be situated in a right-peripheral position (Chomsky 1981:311) and must not be embedded deeper within the OP clause (Jacobson 2000). Otherwise, extraction from the OP clause is impossible, (51).

- (50) (a) Which violins<sub>2</sub> are the sonatas<sub>1</sub> easy to play *e*<sub>1</sub> on *e*<sub>2</sub>? (Chomsky 1981:310)
- (b) \*Which violin<sub>2</sub> is that sonata<sub>1</sub> hard to imagine (anyone) playing *e*<sub>1</sub> on *e*<sub>2</sub> / wanting to play *e*<sub>1</sub> on *e*<sub>2</sub>? (Jacobson 2000)
- (51) (a) \*How intelligent<sub>2</sub> is John<sub>1</sub> easy to think of / regard *e*<sub>1</sub> as *e*<sub>2</sub>?
- (b) How intelligent<sub>1</sub> is it easy to think of / regard John as *t*<sub>1</sub>
- (c) ?John<sub>1</sub> is easy to think of / regard *e*<sub>1</sub> as very intelligent.  
(cf. Chomsky 1981:311)

A further constraint is that the TM OP-gap chain must be contained within any *wh*-gap chains, obeying Pesetsky’s (1982) Path Containment Condition on interacting  $\bar{A}$ -dependencies:

- (52) (a) \*Which sonatas<sub>2</sub> are the violins<sub>1</sub> easy to play  $e_2$  on  $e_1$ ? (Chomsky 1981:310)  
 (b) \*Which people<sub>2</sub> are the books<sub>1</sub> easy to convince  $e_2$  to read  $e_1$ ?  
 (Chomsky 1981:310)

This degradation is very sharp, sharper than in corresponding crossing overt *wh*-movement chains. There is quite a simple explanation available within theories that start out from Rizzi's (1990) relativized minimality: if the OP-gap and the *wh*-gap are both equally attractable by the  $\bar{A}$ -probe at the top of the OP clause, only the closer gap can be found. The latter fact may be part of a larger pattern; Rizzi (forthcoming) observes that different types of  $\bar{A}$ -movement such as *wh* and focus movement are frozen for each other, which would fall out if there was a unitary  $\bar{A}$ -probe, with criterial positions differentiated by the interpretable features of the target (op.cit., note 2). If the gap closest to  $C_{OP}$  is the one eventually  $\lambda$ -bound by the TM subject, all is well, and the data-set in (50) results. If it is an overt *wh*-phrase, the derivation does not converge because a number of mismatches arises: the *wh*-phrase will not have its [wh] feature deleted, it cannot move to the top of the OP clause which does not tolerate overt material (4.4), the matrix C will not find an active *wh*-phrase as a goal, and so on. Put differently, the ban on crossing paths ends up as a defective intervention effect of the *wh*-phrase on the  $C_{OP}$ -gap relation.

Let us take stock and see how this all squares with various approaches to the OP-gap relation. There is  $\bar{A}$ -Agree constrained by feature-relativized locality between  $C_{OP}$  and the gap. This is as predicted by either the OP-movement or the pure  $\bar{A}$ -Agree approach; treating the gap as simple *pro* that does not enter into  $\bar{A}$ -Agree requires a different set of assumptions, developed in Cinque (1990: chapter 3). The fact that the OP clause is a barrier to further extraction also follows on both approaches. If there is OP-movement, the displaced OP is the  $\bar{A}$ -intervener. If there is pure  $\bar{A}$ -Agree by  $C_{OP}$  with the gap, the valued  $\bar{A}$ -probe of  $C_{OP}$  is an intervener for higher  $\bar{A}$ -probes (cf. Manzini 1998).<sup>21</sup> I will now go through the various bits of OP-gap behavior that seem to bear one way or another on distinguishing the pure  $\bar{A}$ -Agree and the OP  $\bar{A}$ -movement approaches, generally supporting the former.

### 4.3 OP-movement as $\bar{A}$ -Agree

#### 4.3.1 Object gap restrictions

Lasnik and Fiengo (1974) point out that the TM gap cannot be either of the two objects in a double object construction DOC; in their judgment, indirect object IO extraction leads to severe ungrammaticality, direct object DO extraction to a somewhat weaker one (cf. Cinque 1990: 108).

- (53) (a) John was fun/tough/impossible/a bitch to give criticism  $e$ .  
 (b) \*John was fun/tough/impossible/a bitch to give  $e$  criticism.  
 (c) Criticism was fun/tough/impossible to give  $e$  to John.

- (d) \*?Criticism was fun/tough/impossible/a bitch to give John *e*.

(Lasnik and Fiengo 1974: 548, 550)

IOs in DOCs show a general resistance  $\bar{A}$ -movement, observed by Fillmore (1965) and variously analyzed (see Baker 1988: 294ff for an overview).<sup>22</sup> However, the ban on DO as the OP-gap is more parochial and intriguing.<sup>23</sup> Cinque (1990: 122–4) develops an ingenious explanation that I would adopt if possible. It supports his analysis of the TM gap as base-generated *pro*. He notes that “dative constructions are characterized by a [...] well-known restriction: their second object can be a pronominal only very marginally (if at all)” (p. 122), (54)a. Pronominal DOs do improve if the IO is light (54)b, a fact that Oehrle (1976) describes more generally as the requirement that the DO be more prominent than the IO on the scale *clitics* < *me/it* < *us/you* / *other 3<sup>rd</sup> person pronouns* < *everything else* (p. 169). Cinque observes that if the IO is a pronoun, DO TM gaps turn out to be impeccable (54)c, which goes in the expected direction.<sup>24</sup>

- (54) (a) \*I gave that man it/them.

- (b) ??I gave ‘im THEM.

- (c) Books are not easy to give him *e*.

(Cinque 1990: 123)

If Cinque has identified the correct pattern, then the TM gap is a (null) pronoun. It is not a trace, which is not subject to Oehrle’s constraint. This supports  $\bar{A}$ -Agree over  $\bar{A}$ -movement.

#### 4.3.2 *The Highest Subject Restriction*

Another positional restriction on the gap in OP clauses is that it cannot be the subject of the matrix of the OP clause. This contrasts with both regular *wh*-movement and with subject-gap infinitival relatives (Williams 1980, Browning 1989: 25f., Bhatt 1999), (55).

- (55) (a) \*Nuwa is easy *e* to halt the flood.

- (b) the woman *e* to halt the flood.

- (c) the woman that *e* halted the flood.

I propose to identify the phenomenon with the *Highest Subject Restriction* known from work on resumptive constructions. This blocks a pronoun (but not a trace) from being  $\bar{A}$ -bound too locally, e.g. from occupying [Spec, TP] if bound from within the C-system of the same functional sequence; this is illustrated in (56) for Czech (see Borer 1984, McCloskey 1990, Shlonsky 1992, Boeckx 2003: 83ff.).

- (56) (a) *To je ta holka<sub>i</sub> [co se \*(j<sub>i</sub>) von libil].*  
 that is that girl such.that SE her-DAT he-NOM appealed.he  
 That’s the girl that he appealed to.

- (b) *To je ta holka<sub>i</sub> [co (\*vona<sub>i</sub>) se mu líbila<sub>i</sub>].*  
 that is that girl such.that she-NOM SE he-DAT appealed.she  
 That's the girl that appealed to him. (Czech)

Some types of strong agreement are subject to a similar *Anti-Agreement Effect* (Ouhalla 1993, Richards 2001: 147ff.). The two phenomena are probably one and the same, for example because this kind of strong agreement is a pronoun in the relevant respect (Ouhalla 1993, Rezac 2004a: 245ff.). It is unlikely that the OP clause matrix, which is infinitival, has agreement of any sort. Straightforwardly interpreted then, the appearance Highest Subject Restriction on the OP-gap chain is indicative of the gap being a base-generated pronoun rather than an  $\bar{A}$ -movement trace (copy).<sup>25</sup>

#### 4.3.3 Subject/object asymmetries in TM gaps

Pronominal nature of the gap might be recruited to explain the subject/object asymmetries it shows. Extraction from embedded subject positions in *wh*-movement is well-formed: the subject of an ECM infinitive, a tensed bridge verb complement lacking a complementizer, and small clause subject, all extract without a problem. In *tough*-movement however, gaps in these positions are subject to varying degrees of degradation, (57)a. This cannot reflect a general ban on left branch gaps, since selected-for left branch gaps are not nearly as degraded, (57)b.

- (57) (a) \*Smith was easy for Jones to expect *e* to recover.

- (b) Smith was easy for Jones to force *e* to recover.

(Chomsky 1973: 254 note 33)

The pattern of goodness and degradation in extraction from embedded subject and object positions for the entire group involving non-overt operators in infinitival clauses is nuanced; see Browning (1989: 131–5). To summarize her conclusions for TM gaps: (i) both subject and object gaps are degraded (though this needs to be set against a number of quite good object gaps, e.g. (47)), but subject gaps more so; (ii) small clause complement subjects are the least degraded among subject gaps; (iii) the semantics of the embedded verb plays a role (cf. also Dalrymple and King 2000: 15, here (58)d vs. (58)e); (iv) intervening tensed clauses degrade grammaticality (cf. ex. (48)); (v) there is amelioration if the clause hosting the subject gap has *be* or a modal.

- (58) (a) ?Mary was difficult for anyone to consider *e* arrogant. (Browning 1989: 132)

- (b) \*Mary was difficult for Jane to believe *e* to understand the problem.

(Browning 1989: 132)

- (c) ??This problem was difficult for me to believe Mary to understand *e*.

(Browning 1989: 132)

- (d) \*Smith was easy for Jones to expect *e* to recover.

(Dalrymple and King 2000: 15, from Berman 1973)



- (e) This analysis was hard for us to prove *e* to be correct.

(Dalrymple and King 2000: 15, from Nanni 1978, attributed to Barbara Partee).

Browning (1989: 135ff.) and Cinque (1990: 105f., 119–121) note that similar subject/object asymmetries also show up for  $\bar{A}$ -gaps in weak islands, (59). Since for Cinque island-internal gaps are *pro*, he takes this as evidence that TM gaps are *pro* as well. However, there is not at hand in this case a neat explanation as to what degrades these subject gaps, since pronouns in these positions are fine.<sup>26</sup> This evidence then is less telling about the nature of the TM gap.

- (59) (a) ??Which guy did John wonder when to expect *e* to show up?

(Browning 1989: 135)

- (b) ?Which gift did John wonder when to expect PRO to receive *e*?

(Browning 1989: 135)

It is worth mentioning here another classical puzzle involving subject gaps: the TM gap is strongly ungrammatical if it is the subject in the Romance ECM construction (Rizzi 1982, Kayne 1981) or triggers the *qui* complementizer in French (cf. Rizzi 1990: 56ff., 97, and references): see Browning (1989: 138ff.), Cinque (1990: 107ff.). The same subject positions also cannot host gaps in weak islands, and again Cinque suggests reducing both phenomena to conditions on *pro*.

#### 4.3.4 Montalbetti's Overt Pronoun Constraint

Montalbetti's (1984) *Overt Pronoun Constraint* OPC prevents a quantifier or the trace of its  $\bar{A}$ -extraction from  $\lambda$ -binding an overt pronoun if *pro* is available, although a bound *pro* may itself bind an overt pronoun.

- (60) (a) *Muchos estudiantes<sub>i</sub> piensan que ellos<sub>i,j</sub>/pro<sub>i,j</sub> son inteligentes.*

many students think that they are intelligent

Many students think that they are intelligent. (Montalbetti 1984: 82)

- (b) *A quienes<sub>i</sub> Pedro convenció t<sub>i</sub> de que ellos<sub>i,j</sub> son tontos?*

A who Pedro convinced of that they are foolish

Who did Pedro convince that they are foolish? (Montalbetti 1984: 98)

- (c) *Muchos estudiantes<sub>i</sub> dijeron que pro<sub>i</sub> piensan que ellos<sub>i</sub> son inteligentes.*

many students said that think that they are intelligent

Many students said that they think they are intelligent.

(Montalbetti 1984: 90)

- (d) *A quienes<sub>i</sub> Pedro convenció de que pro<sub>i</sub> digan que ellos<sub>i</sub> son tontos?*

A who Pedro convinced of that say that they are foolish

Who did Pedro convince to say that they are foolish?

(Montalbetti 1984: 101)

Montalbetti (1984: 157f.) notes that in Spanish *tough*-movement, the gap behaves like a bound *pro* in being able to license a farther pronoun, rather than like the trace of

$\bar{A}$ -extraction which could not. Cinque (1990: 127ff.) adds this as an argument in favor of treating the TM gap as a null pronoun rather than a trace.<sup>27</sup>

- (61) *Muchos estudiantes<sub>i</sub> son faciles de convencer e<sub>i</sub> de que ellos<sub>i</sub> viajen a Lima.*  
 many students are easy of convince of that they travel to Lima  
 Many students are easy to convince to travel to Lima. (Montalbetti 1984: 157)

#### 4.3.5 Condition C and Strong Cross-Over

There is one solid piece of evidence that the gap does not behave as a regular pronoun: the OP-gap chain is subject to strong cross-over if it crosses a pronoun, (62)a.<sup>28</sup>

- (62) (a) Antero Vipunen<sub>j</sub> would be difficult PRO<sub>arb</sub> to convince him<sub>??i/\*j</sub>/ \*himself<sub>j</sub>  
 that I admire *t<sub>j</sub>*.  
 (b) Antero Vipunen<sub>j</sub> is easy OP<sub>j</sub> PRO<sub>arb</sub> to spot *t<sub>j</sub>* in a crowd.  
 (c) \*Antero Vipunen<sub>i</sub> is possible [<sub>CP</sub> *t<sub>i</sub>*' PRO to like *t<sub>i</sub>*]

The validity of this conclusion depends on what strong cross-over is. Chomsky (1981: 203ff.) treats it as Condition C applied to  $\bar{A}$ -traces, which thus behave as R-expressions. Tension arises between the legitimacy of *tough*-movement, where the TM subject is ultimately linked to an  $\bar{A}$ -bound (OP-bound) gap on standard accounts, and using Condition C to rule out improper movement in (62)c where *t<sub>i</sub>* as an  $\bar{A}$ -trace (of *t<sub>i</sub>'*) is illegitimately bound by *John<sub>i</sub>* because of Condition C. This has led to the standard formulation where Condition C requires  $\alpha$  to be free in the domain of the head of its maximal chain, defined as the history of the movement of  $\alpha$  (Chomsky 1981: 193–204, 1986b: 113f., Brody 1993: 8ff.). Thus, while *him* in (62)a triggers Condition C for *t<sub>j</sub>*, *John* does not trigger it for *t<sub>j</sub>* in (62)b because the chain of *t<sub>j</sub>* ends in OP<sub>j</sub>. Since *possible* does not select an OP clause, the only representation of (62)c is with *John* illegitimately binding *t<sub>i</sub>* within the latter's maximal chain (terminating at *John<sub>i</sub>*). Higginbotham (1983) and Postal (1997, 2004: chapter 7) present significant challenges to treating strong crossover as Condition C, leaving the phenomenon without a clear explanation. Here it suffices to note that even approaching it as Condition C in (62)a, the fact that the null pronoun in the gap bears an  $\bar{A}$ -feature, an extra formally interpretable property normally associated with topic, focus, etc., might subject it to Condition C in the manner of an R-expression.

#### 4.4 The distribution of pure $\bar{A}$ -Agree

Although there is reason to be cautious, there is evidence that the TM gap behaves like a null pronoun rather than an  $\bar{A}$ -trace/copy. The location of the gap is constrained by the locality of  $\bar{A}$ -Agree, so this pronoun enters into pure  $\bar{A}$ -Agree with C<sub>OP</sub>, without any displacement consequent on this relation itself. I assume that the pronoun has an  $\bar{A}$ -feature that renders it active for the  $\bar{A}$ -system, so I will refer to it as *pro <sub>$\bar{A}$</sub>* .

*Pro <sub>$\bar{A}$</sub>*  requires Agree to eliminate its  $\bar{A}$ -feature. The C<sub>OP</sub> head of OP clauses, which

has an  $\bar{A}$ -probe, considers  $pro_{\bar{A}}$  a match and Agree between the two satisfies the requirements of both. Following Brody (1993: 8f.), I have been assuming that  $C_{OP}$  (like e.g.  $C_Q$ ) is subject to selection, accounting for why *impossible* but not (*not*) *possible* is a TM trigger. Three related questions arise: (i) whether are there non-arbitrary restrictions on the selection of  $C_{OP}$ ; (ii) why does  $C_{OP}$  require  $pro_{\bar{A}}$  and is not content with e.g. a relative pronoun; (iii), and vice versa, why is  $pro_{\bar{A}}$  limited to clauses with  $C_{OP}$  and does not appear in clauses that have a suitable  $\bar{A}$ -probe provided the semantics does not require that the  $\bar{A}$ -probe have another goal, for example why can  $pro_{\bar{A}}$  not appear in a regular clause under topicalization. Some headway on answering these seems possible.

Consider the general class of “*On wh-movement constructions*” in English (Chomsky 1977, Browning 1989). *Wh*-questions and topicalizations, which may be finite or non-finite, necessarily have an overt goal for their  $\bar{A}$ -relation which moves to their left periphery, (63). Let’s set these apart from those whose left periphery need not be overtly filled by the  $\bar{A}$ -goal.

(63) I don’t know what/\* $\emptyset$  (I want) to bake.

Among the rest, there is a split between those whose topmost clause must be tensed, namely tensed relatives, clefts, and comparatives, and those where it must be infinitival, namely infinitival relatives, *tough*-movement OP clauses, degree clauses, and purpose clauses; parasitic gaps are possible with both infinitival and tensed clauses (Culicover 2001). Browning (1989: 127ff.) views tense as significant. Only the tensed group may have overt an  $\bar{A}$ -phrase, deletable up to recoverability (Chomsky and Lasnik 1977), (64), while the infinitival group must use “null operators” (with one exception, below), (65). Levin (1983, 1984) develops an attractive explanation for this: overt  $\bar{A}$ -phrases require Case(-like) licensing, which a tensed but not an infinitival T provides to its local [Spec, CP]. It is also only the tensed group, setting aside parasitic gaps, which shows relative insensitivity to depth of embedding, intervening tensed clauses, and subject/object asymmetries (aside from *that*-trace). One could take degradation in these contexts to arise from the null nature of this group’s  $\bar{A}$ -phrase. However, as Browning (1989: 144f.) observes, infinitival relatives do in fact allow overt operators, provided they pied-pipe other material, (66).<sup>29</sup>

(64) Overt operator in tensed constructions

(a) the dragon who talked with Ath

(b) John has more money than what I have.

(Browning 1989: 127)

(65) Overt operator in TM

(a) Wade and Guingelot are easy/too mysterious (\*who) to talk about at length.

(b) \*Wade and Guingelot are easy/too mysterious about whom to talk at length.

- (66) Overt operator in infinitival relatives
- (a) A person \*(who) to invite. (Browning 1989:127)
- (b) This is a pleasant room in which to work (Chomsky 1981:309)
- (c) a(n easy) topic [about which to write] (Wilder 1991:126)

Table 1 gives a more comprehensive overview of the different tensed and infinitival constructions apart from questions and topicalizations; for examples and discussion, see Browning (1989) and Cinque (1990) in general, Montalbetti (1984) for the Overt Pronoun Constraint OPC, and Bhatt (1999) for infinitival relatives. The properties are self-explanatory given the preceding discussion, except for the category of *overt subject*; this refers to whether the clause of the relevant construction allows an overt subject.

Table 1. Properties of “On wh-movement constructions”

| Diagnostic                      | TM      | Degree clauses | Parasitic gaps | Infinitival relatives | Tensed relatives and questions |
|---------------------------------|---------|----------------|----------------|-----------------------|--------------------------------|
| Sensitive to $\bar{A}$ -islands | yes     | yes            | yes            | yes                   | yes                            |
| Creates $\bar{A}$ -islands      | yes     | yes            | unknowable     | unknowable            | yes                            |
| Licenses PGs                    | yes     | yes            | yes            | yes                   | yes                            |
| Highest subject gap             | no      | no             | no             | yes                   | yes                            |
| DO gap in DOC                   | no      | no             | no             | yes*                  | yes                            |
| S/O asymmetries                 | yes     | yes            | yes            | yes                   | no**                           |
| Montalbetti's OPC               | pronoun | ?              | ?              | ?                     | trace†                         |
| Adjunct gap                     | no      | yes            | no             | yes                   | yes                            |
| Tense sensitivity               | high    | high           | high           | mild                  | low                            |
| Embedding sensitivity           | high    | high           | high           | mild                  | low                            |
| Highest clause tense            | inf.    | inf.           | inf./fin.      | inf.                  | fin.                           |
| Overt subject                   | no      | no             | yes            | yes                   | yes                            |
| Overt operator                  | no      | no             | no             | pied-piped            | yes                            |

\* Cf. ?*Looking for a book to give a friend?* vs. ?\**This book is difficult to give a friend.*

\*\* Yes if the gap is in an island.

† Montalbetti's OPC diagnoses as a trace the gap in tensed questions; for the more complex situation of relative clause gaps, see Montalbetti (1984:138 note 18).

The pattern indicates that TM OP clauses, degree clauses, and parasitic gaps go together, falling under the pure  $\bar{A}$ -Agree by  $C_{OP}$  analysis.<sup>30</sup> On the other hand, the pattern of infinitival relatives suggests that *wh*-movement is at least an option, leading to the possibility of overt operators (though obligatorily deleted under recoverability), which the  $C_{OP}$  group cannot have. Such a conclusion would remove subject/object asymmetries from the diagnostic characteristics of  $pro_{\bar{A}}$ ; perhaps that is just as well, since as noted there is no clear understanding of how they arise.

$C_{OP}$  thus shows no correlation with finiteness or the possibility of overt subjects. The contrast between it and infinitival relatives in the possibility of overt operators

is valuable: it suggests that  $C_{OP}$  must be stipulated to simply not project a specifier, namely to not have an EPP/OCC feature in current terminology. One could press this conclusion to answer question (ii) posed above, why  $C_{OP}$  cannot have an overt goal such as a relative pronoun instead of  $pro_{\bar{A}}$ . If such an overt goal requires movement under Agree, it cannot be the goal of  $C_{OP}$ . Relative pronouns in English are a good example: they must move to [Spec, CP] (or be contained within a constituent that does), and cannot stay in-situ:

- (67) (a) The palette which Narmer had requested.  
 (b) The palette (that) Narmer had requested  $\emptyset$ /\*which.  
 (c) The palette such that Narmer had requested it/\*which.

This leaves questions (i) and (iii): is there a deeper principle underlying the external distribution of  $C_{OP}$  clauses apart from arbitrary selection (much as the distribution of  $C_Q$  partly reduces to the semantics of questions), and why does  $pro_{\bar{A}}$  require  $C_{OP}$  rather than e.g. topicalization. Browning's (1989: 26f., 53ff.) idea is that the  $\phi$ -features of OP, for her *pro* in an  $\bar{A}$ -position and here *pro* with an  $\bar{A}$ -feature, must be identified, in the sense of Rizzi (1986). This is promising: *tough*-movement and perhaps degree clauses involve  $\phi$ -Agree between  $C_{OP}$  and a higher T where  $\phi$ -features are expressed, and the licensing of parasitic gaps refers to  $\phi$ /Case features as well (Culicover 2001: 35ff. and literature cited therein).

Two broad groups of  $C_{OP}$  occurrences should therefore exist. First,  $C_{OP}$  in selected positions (compatible with it semantically) that lie within the reach of a higher  $\phi$ -Agree. This ultimately identifies the  $\phi$ -features of  $pro_{\bar{A}}$ : T Agrees with  $C_{OP}$  which has Agreed with  $pro_{\bar{A}}$ . *Tough*-movement belongs here. Second, unselected adjuncts where the parasitic gap mechanism works, whatever it be.<sup>31</sup> This approach solves questions (i) and (iii) both. The distribution of  $pro_{\bar{A}}$  is tied to the distribution of  $C_{OP}$  because only  $C_{OP}$  is such that it both gets  $\phi$ -features from  $pro_{\bar{A}}$  and makes them available to external  $\phi$ -Agree (section 3.2); and  $C_{OP}$  must occur in contexts where a  $\phi$ -identification mechanism such as  $\phi$ -Agree is available, because by the answer to question (i) it requires  $pro_{\bar{A}}$  as goal.

## 5. Conclusion

I end my discussion of *tough*-movement here. Of the four core problems laid out at the outset, the subject-gap linking problem falls out from just the syntax-semantics mapping needed for the interpretation of non-thematic positions, as does the scattered interpretation of TM subjects for quantification and selection. The subject-gap correlation problem also largely emerges from the same system, with the need to stipulate the limitation of  $\phi$ -transparent clauses to copy-raising verbs in English. The OP-gap problem is a collection of anomalous behaviors on the part of the gap in contrast to more usual  $\bar{A}$ -movement gaps; treating the *tough*-movement gap as a null

pronoun with an  $\bar{A}$ -feature,  $pro_{\bar{A}}$ , that undergoes pure  $\bar{A}$ -Agree with a higher  $C_{OP}$ , is promising. The fact that this  $pro_{\bar{A}}$  must be licensed by Agree and that  $C_{OP}$  does not project a specifier limits them to co-occurring with each other. Finally, the selection problem has been addressed in terms of the distribution of  $C_{OP}$ . Browning's hypothesis, still in need of a deeper understanding but with the air of explanation to it, leads us to expect  $C_{OP}$  in configurations where the  $\phi$ -features it gets from the gap are externally identified, and this fits its actual distribution.

## Notes

\* I am grateful to comments from the audience of the Minimalist Theorizing workshop, and to Cedric Boeckx as organizer and editor. This work develops the ideas sketched out in Rezac (2004a: chapter 3, esp. p. 187ff.), and for comments on that section I am grateful to Gabriela Alboiu, Diane Massam, and Peter Svenonius. Mélanie Joutiteau has patiently borne the brunt of my quest for *tough*-movement and copy-raising in French, and Susana Béjar, for reconstruction therein in English. Thanks go also to Glyn Hicks who pointed out a couple of inaccuracies in the nick of time. Remaining problems are mine. This work was partly funded by SSHRC grants #752-2000-1545, #756-2004-0389, and UPV-EHU grant #9 UPV 00114.130-160.09-2004 U.

1. This has led Chomsky (1995: chapter 3) to the reintroduction of generalized transformations, in order to allow the S-structure insertion of a complex TM subject; cf. Uriagereka (2000), Lasnik and Uriagereka (1988: 147).

2. Wilder (1991: 123, 128-9) notes some intriguing but limited counter-examples involving clausal arguments:

(i) [For him to be top of the class] is hard to believe *e*. (Wilder 1991: 123)

(ii) \*I believe for him to be the top of the class. (Wilder 1991: 123)

3. Keeping only to those syntactically visible at all as diagnosed by A-movement, like *tabs* in *Tabs seem to be kept on Kate / They keep tabs on Kate* and unlike *the bucket* in *Kate kicked the bucket / \*The bucket was kicked by Kate*.

4. Cf. however Lasnik and Fiengo (1974: 552), who point out that the OP clause degrades as a passive infinitive, just like the complement of restructuring verbs like *try*.

5. Epstein (1984) argues that it is present as a covert universal argument even if not overt. Note that there may be other (typically left-peripheral) *for*-phrases around that are not experiencer arguments.

6. Indeed, Nanni (1980) points out that the OP clause cannot be pied-piped by *wh*-movement of the trigger, whether or not TM occurs, (i), (ii). Thus either *wh*-movement takes only minimal AP projection, or the OP clause right-adjoins higher than the AP, e.g. at the VP level, which accounts for Nanni's data without positing reanalysis.

(i) \*How easy for the children to tease is John? (Nanni 1980: 572)

(ii) \*How difficult for them to understand the issues was it? (Nanni 1980: 578)

7. Here in speaking of a DP I really mean an *e*-type DP. Like an *e*-type DP (i), a quantifier must compose with its sister turned into a  $\lambda$ -abstract (type  $\langle e, t \rangle$ ) (ii). However, while the  $\lambda$ -abstract in (i) takes an *e*-type DP as an argument, it is the generalized quantifier denoted by

a quantified DP (type  $\langle\langle e, t \rangle, t \rangle$ ) which takes the  $\lambda$ -abstract ( $\langle e, t \rangle$ ) as an argument. The variable bound by the derived predicate's  $\lambda$ -abstract is interpreted through the  $e$ -type individuals that the generalized quantifier quantifies over, e.g. *most students*. Though the interpretive function-argument relationship is different in the two cases, the issues and mechanics discussed in this section are the same, so I can keep to (i).

- (i)  $DP_{\langle e \rangle} : DP \lambda x [\dots x \dots]_{Pred} \Rightarrow Pred(DP)$  (where DP substitutes for  $x$  in Pred)  
 (ii)  $[Q DP]_{\langle\langle e, t \rangle, t \rangle} : QP \lambda x [\dots x \dots]_{Pred} \Rightarrow Q(DP)(Pred)$  (where Q binds  $x$  in Pred)

8. However, this detail of the proposal does not play a crucial role in the treatment of *tough*-movement itself, which could do with formulating Predicate Abstraction to operate on Agree-valued  $\phi$  (index) features directly.

9. Cf. Branigan and MacKenzie (2001: 405, 399 note 14), Rezac (2004a: 136f.) for the blocking of cross-clausal agreement by the addition of a matrix  $\phi$ -accessible goal.

10. This can be implemented by giving C interveners a designated  $\phi$ -set whose unique index will be compatible with Merge of the *it* expletive only (cf. Lasnik 1999: 136), or by assuming that the intervener is really *it* rather than C in a structure  $[_a \text{ it CP}]$  (Rosenbaum 1965: chapters 1, 2, Moro 1997: 173ff., Anagnostopoulou 2003: 187); see Rezac (2004b) for discussion.

11. I ignore here whether interaction with phase theory needs to be further specified (cf. Branigan and MacKenzie 2001, Bruening 2001, Svenonius 2004), and whether  $\phi$ -Agree is directly with the goal in violation of the Activity Condition (op. cit.) or whether it proceeds via the head that the goal has Agreed with in its clause as in Rezac (2004a: 199ff.). Section 4 here argues that OP in *tough*-movement is just a C that has Agreed with the gap, avoiding the latter question for English.

12. The glosses are taken from the cited originals and employ the following abbreviations: arabic numerals (1, 2, etc.) for person, roman numerals (I, II, etc.) for noun class, F feminine, SG singular, PL plural, NOM nominative, ERG ergative, ABS absolutive, DAT dative, TOP topic, OBV the obviative of the Algonquian languages, SE Romance *se*-type particle, NEG negation, NMLZ nominalizing affix, ASP aspect, PERF perfect, PRES present tense, PAST past tense, PART participle, CONJ the conjunct order of the Algonquian languages, FV the final vowel of the Bantu verb, CA complementizer agreement, SA subject agreement.

13. Unless the experiencer is an anaphor, in which case it arguably cannot itself control PRO.

14. It is an open question whether OP in (i) should be subject to Condition B triggered by the TM subject. Watanabe's (2000) treatment of Switch Reference and Borer's (1989) treatment of control imply that interpretable  $\phi$ -features in the C-system of a clause are subject to Conditions A and B with respect to arguments of the next higher clause (though Landau's 2000 development of Borer 1989 does not). If Condition B should apply, OP cannot be *pro*; the analysis of section 4 here where OP is just  $\bar{A}$ -Agree by  $C_{OP}$  with *pro* in the TM gap would be required.

- (i) Tilq<sub>i</sub> is easy  $[OP_i \text{ to like } e_i]$

15. This also suggests a solution to a long-standing problem: the TM gap may not be an adjunct (i), (ii), which is anomalous even in comparison to other constructions with obligatorily null operators, (iii) (Browning 1989: 118ff., Cinque 1990: 104). If the gap is an  $e$ -type pronoun, it should not be interpretable as an adjunct which is of type  $\langle e, t \rangle$  or higher. The tenor of this solution is the same as Cinque's (1990: 115ff.) explanation why adjuncts cannot escape islands; it leads us to expect a correlation between which adjuncts can(not) be TM subjects and which can(not) escape weak islands or link to resumptives (McCloskey 2002, Postal 1998, Cinque 1990).



- (i) \*Tuesday/\*quietly is easy [to meet *e*].
- (ii) \*?That way may be hard [to fix the car *e*].
- (iii) Kate has an odd way [to fix the car *e*].

16. This echoes Lasnik and Fiengo's (1974) observations that the TM subject is compatible with the progressive, the adverb *intentionally*, root interpretation of modals, and being controlled by the subject of *try*: unlike, they claim, both the clausal subject construction of TM triggers, and raising triggers in general with or without actual raising. However, these correlation don't seem to hold, though (iii) and (iv) could be argued to be control (cf. Martin 1996).

- (i) It must seem that windows are broken in order to convince the thieves to ignore the car. (root reading)
- (ii) It must be easy to talk to the contestant so that the audience is not too intimidated. (root reading)
- (iii) Now that things are seeming to come back under some control...
- (iv) Lunfan intentionally seems to be blurring the line between "puppet theater for adults" and "adult theater."

(i-iv originally inspired by Google<sup>TM</sup> searches.)

17. Complement object deletion COD like *The boat is pretty to look at* is often brought into relation with *tough*-movement. However, they differ in that (i) the COD trigger's [Spec, TP] does not permit an expletive (*\*It is pretty to look at the boat*) or an idiom chunk (*\*Headway is pretty to make in this problem*), (ii) embedding the gap gives rise to sharp ungrammaticality (Schachter 1981, Heycock 1994: 260), and (iii) the COD trigger cannot take a *for*-experiencers (Lasnik and Fiengo 1974: 566ff.). (i) and (ii) clearly suggest a different approach to subject-gap relation in COD than in *tough*-movement; a complex predicate analysis seems to have the right properties.

18. Immediately or at the phase-level, Chomsky (2000: 131), the two options collapsing into one if there is a more abstract notion of a phase correlating with Agree, Chomsky (2004).

19. There is no weak cross-over for a pronoun contained in the OP-gap chain. Lasnik and Stowell (1991) treat this by taking OP to quantify over a singleton set; this makes sense semantically for example for non-restrictive relative clauses, which cannot modify true quantifiers, but not for TM, as in (i). However, TM should fail to trigger WCO simply because the offending pronoun can be  $\lambda$ -bound by the TM subject rather than OP, as (i) shows.

- (i) No one<sub>1,2</sub> is easy [OP<sub>1</sub>' to get his<sub>2</sub> foes [to like *e*<sub>1</sub>].

20. Not only must the TM gap not be in an island, it also cannot pied-pipe the island as is possible with overt operators. Chomsky (2001: 23f.) suggests that *a* can only pied-pipe if *a* has phonological features, unlike OP.

21. C<sub>OP</sub> is part of the phase-edge of the phase it defines if it defines one, and a phase-edge must not be affected by deletion or spell-out until the next higher phase-head has accessed it (Chomsky 2000, 2001).

22. Terence Langendoen, Kalish-Landon, and Dore (1973) have shown that for some English speakers, *wh*-questions (with an overt *wh*-word) are fine with an IO gap, and they suggest a processing account of the degradation for all speakers. The TM gap degradation seems worse, but this may be because the  $\lambda$ -binder of the gap, OP, is non-overt.

23. Though see Nakamura (1997) for discussion of the ban on DO-extraction in the Bantu languages.



24. The fact that they are impeccable rather than less degraded as the corresponding DO pronouns are, Cinque thinks to follow from the *pro* being between a 3<sup>rd</sup> person pronoun and a *wh*-bound variable/trace.

25. The classical treatment of (55) would be that an  $\bar{A}$ -trace is out because the subject position lacks Case and is not properly governed, but it is less clear why PRO could not be  $\bar{A}$ -bound in the manner of a (resumptive) pronoun.

26. A more serious objection would arise if subject/object asymmetries of this type were to arise in cases of genuine  $\bar{A}$ -movement that cannot be analyzed as *pro* resumption. However, although subject/object asymmetries do indeed show up with  $\bar{A}$ -movement occasionally, for example in middle-field quantifier movement in Icelandic, they group ECM subjects with objects as good gaps against finite subjects as bad gaps (themselves good gaps in that language for topicalization): see Svenonius (2000).

27. A caveat must be raised here: the argument holds only provided that Spanish TM is truly TM, rather than a type of restructuring as French TM seems to be (cf. Kayne 1975:340 note 76, Kayne 1989:250–1 and 257 note 50, Miller and Sag 1997:626, Abeillé et al. 1998, Tellier 2001:342, Cinque 2002); so probably also in Italian (Rizzi 1982:26).

28. The data in (62)a are somewhat murky; certainly *him=j* is bad, but *him=i* is not very good either, and it may be impossible to construct a more contrastive example. “Reanalysis” would lead us to expect *himself<sub>j</sub>*, also bad.

29. Parasitic gaps are possible when tensed and never allow overt operators, (i). But this may have to do with the preposition *before*, in the same way that the lack of *wh*-movement in *for-to* infinitives has been taken as due to the Doubly Filled Comp filter.

(i) What did everyone review *t* before (\*what) I read *pg*?

30. The only anomaly seems to be adjunct gaps in degree clauses, (i). The *too/enough* constructions which take degree clauses may also predicate their subject of a gap-less clause, often called (negative) result clause (Lasnik and Fiengo 1974:537ff., Browning 1989:27ff., 64), which may have a specified subject or a PRO controlled the matrix subject, unlike degree (and OP) clauses with gaps, (ii). (i) could be an example of a negative result clause, eliminating the problem. However, Lasnik and Fiengo (1974:558) observe that such gapless negative result clauses seem impossible unless they do in fact have subject-controlled PRO or a *for-to* infinitive, (iic). I have no good understanding of how (i) escapes this requirement.

(i) Tuesday is too soon to leave.

(ii) a This problem<sub>i</sub> is too abstract for there to be an easy solution (to it<sub>i</sub>).

b This problem<sub>i</sub> is too abstract PRO<sub>i</sub> to be easily solved.

c This problem<sub>i</sub> is too abstract (\*for Bill) to solve it<sub>i</sub>.

d For whom is this problem<sub>i</sub> too abstract to solve  $\emptyset$ /\*it<sub>i</sub>.

31. This could be  $\phi$ -Agree, though with *v* rather than T, perhaps going some way to explaining the  $\phi$ /Case-parallelism requirements on the real and parasitic gaps. On the other hand, heads of adjuncts are not generally accessible to external  $\phi$ -Agree, as adverbial DPs show, so the mechanism might be unrelated.

## References

- Abeillé, A., D. Goddard, P. Miller and I. Sag. 1998. French bounded dependencies. In *Romance in HPSG*, L. Dini and S. Balari (eds), 1–54. Stanford CA: CSLI.
- Akmajian, A. 1972. Getting tough. *Linguistic Inquiry* 3:373–377.
- Anagnostopoulou, E. 2003. *The Syntax of Ditransitives: Evidence from clitics*. The Hague: Mouton de Gruyter.
- Baker, M. 1988. *Incorporation: A theory of grammatical function changing*. Chicago IL: University of Chicago Press.
- Béjar, S. and M. Rezac. 2003. Cyclic agree. Ms., McGill University and University of Toronto.
- Berman, A. 1973. A constraint on tough-movement. In *Papers from the Ninth Regional Meeting of the Chicago Linguistic Society*, C. Corum, T. C. Smith-Stark, A. Weiser (eds). 34–43. Chicago IL: Chicago Linguistic Society.
- Bhatt, R. 1999. Covert Modality in Non-finite Contexts. PhD dissertation, University of Pennsylvania, Philadelphia.
- Boeckx, C. 2002. Agree or attract? A relativized minimality solution to a proper binding condition puzzle. In *Typological Approaches to Language Universals*, A. Alexiadou (ed.), 41–65. Amsterdam: John Benjamins.
- Boeckx, C. 2003. *Island and Chains*. Amsterdam: John Benjamins.
- Borer, H. 1984. Restrictive relatives in modern Hebrew. *Natural Language & Linguistic Theory* 2:219–260.
- Borer, H. 1989. Anaphoric AGR. In *The Null Subject Parameter*, O. Jaeggli and K. Safir (eds), 69–109. Dordrecht: Kluwer.
- Branigan, P. and M. MacKenzie. 2001. Altruism, Å-movement, and object agreement in Innu-aimûn. *Linguistic Inquiry* 33:385–407.
- Brody, M. 1993. Theta theory and arguments. *Linguistic Inquiry* 24:1–23.
- Browning, M. A. 1989. *Null Operator Constructions*. New York NY: Garland.
- Bruening, B. 2001. Syntax at the Edge: Cross-clausal phenomena and the syntax of Passamaquoddy. PhD dissertation, MIT.
- Calcagno, M. 1999. Some thoughts on tough-movement. In *Tübingen Studies in Head-Driven Phrase Structure Grammar* [Arbeitsberichte des SFB 340, #132], V. Kordoni (ed.), 198–230. Tübingen: Universität Tübingen.
- Carstens, V. 2003. Rethinking complementizer agreement: Agree with a case-checked goal. *Linguistic Inquiry* 34:393–412.
- Chomsky, N. 1964. *Current Issues in Linguistic Theory*. The Hague: Mouton de Gruyter.
- Chomsky, N. 1973. Conditions on transformations. In *A Festschrift for Morris Halle*, S. A. Anderson and P. Kiparsky (eds), 232–285. New York NY: Holt, Rinehart, and Winston.
- Chomsky, N. 1977. On wh-movement. In *Formal Syntax*, P. Culicover, T. Wasow and A. Akmajian (eds), 71–132. New York NY: Academic Press.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge MA: The MIT Press.
- Chomsky, N. 1986a. *Barriers*. Cambridge MA: The MIT Press.
- Chomsky, N. 1986b. *Knowledge of language: Its nature, origins, and use*. New York NY: Praeger.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist*

- syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka (eds), 89–156. Cambridge MA: The MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2004. Beyond explanatory adequacy. In *Structures and Beyond: The cartography of syntactic structures*, A. Belletti (ed.), 104–132. Oxford: OUP.
- Chomsky, N and H. Lasnik. 1977. Filters and control. *Linguistic Inquiry* 8: 425–504
- Cinque, G. 1990. *Types of A'-dependencies*. Cambridge MA: The MIT Press.
- Cinque, G. 2002. A note on 'restructuring' and quantifier climbing in French. *Linguistic Inquiry* 33: 617–636.
- Cresti, D. 1995. Extraction and reconstruction. *Natural Language Semantics* 3: 79–122
- Culicover, P. W. 2001. Parasitic gaps: A history. In *Parasitic Gaps*, P. W. Culicover and P. M. Postal (eds), 3–68. Cambridge MA: The MIT Press.
- Culicover, P. W. and P.M. Postal (eds). 2001. *Parasitic Gaps*. Cambridge MA: The MIT Press.
- Dalrymple, M. and T.H. King. 2000. Missing-object constructions: Lexical and constructional variation. In *On-line Proceedings of the LFG2000 Conference*, M. Butt and T. H. King (eds). Available at <http://cslipublications.stanford.edu/LFG/5/lfg00dalrymple-king.pdf>.
- Diesing, M. 1992. *Indefinites*. Cambridge MA: The MIT Press.
- Dowty, D. R., R.E. Wall and S. Peters. 1985. *Introduction to Montague Semantics*. Dordrecht: Reidel.
- Epstein, S.D. 1984. Quantifier-*pro* and the LF representation of PRO<sub>arb</sub>. *Linguistic Inquiry* 15: 499–504.
- Epstein, S.D. 1989. Quantification in null operator constructions. *Linguistic Inquiry* 20: 647–658.
- Fillmore, C.J. 1965. *Indirect object constructions in English and the ordering of transformations*. The Hague: Mouton.
- Fox, D. 2002. Antecedent-contained deletion and the copy theory of movement. *Linguistic Inquiry* 33: 63–96.
- Frampton, J. 1990. *Relativized Minimality*, a review. *The Linguistic Review* 8: 1–46.
- Hagstrom, P. 1998. *Decomposing Questions*. PhD dissertation, MIT.
- Heim, I. and A. Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
- Heycock, C. 1994. *Layers of Predication: The non-lexical syntax of clauses*. New York NY: Garland.
- Hicks, G. 2003. 'So Easy to Look at, so Hard to Define': *Tough* movement in the minimalist framework. MA thesis, University of York.
- Higginbotham, J. 1983. Logical form, binding, and nominals. *Linguistic Inquiry* 14: 395–420.
- Holmberg, A. 2001. Am I unscientific? A reply to Lappin, Levine, and Johnson. *Natural Language and Linguistic Theory* 18: 837–842.
- Horn, G. M. 2003. Idioms, metaphors, and syntactic mobility. *Journal of Linguistics* 39: 245–273.
- Hornstein, N. 2000. *Move! A minimalist theory of construal*. Oxford: Blackwell.
- Jacobson, P. 2000. Extraction out of *tough*. *Snippets* 1: 7–8.
- Jónsson, J. G. 1996. *Clausal Architecture and Case in Icelandic*. PhD dissertation, University of Massachusetts, Amherst.
- Kaplan, R. M. and J. Bresnan. 1982. Lexical-functional grammar: A formal system for grammatical representation. In *The Mental Representation of Grammatical Relations*, J. Bresnan (ed.), 173–281. Cambridge MA: The MIT Press.

- Kayne, R. 1975. *French Syntax*. Cambridge MA: The MIT Press.
- Kayne, R. 1981. ECP extensions. *Linguistic Inquiry* 12: 93–133.
- Kayne, R. 1989. Facets of Romance past participle agreement. In *Dialect Variation and the Theory of Grammar*, P. Benincà (ed.), 85–103. Dordrecht: Foris.
- Kim, B. 1995. Predication in *tough* constructions. In *Proceedings of WCCFL 14*, J. Camacho, L. Choueiri and M. Watanabe (eds), 271–285. Stanford CA: CSLA.
- Kinyalolo, K. K. W. 1991. Syntactic Dependencies and the Spec-head Agreement Hypothesis in Kilega. PhD dissertation, UCLA.
- Kratzer, A. 1995. Stage-level and individual-level predicates. In *The Generic Book*, G. N. Carlson and F. J. Pelletier (eds), 125–175. Chicago IL: Chicago University Press.
- Landau, I. 2000. *Elements of Control: Structure and meaning in infinitival constructions*. Dordrecht: Kluwer.
- Lasnik, H. 1999. *Minimalist Analysis*. Oxford: Blackwell.
- Lasnik, H. 2002. Feature movement or agreement at a distance? In *Remnant Movement, F-Movement and the T-Model*, A. Alexiadou, E. Anagnostopoulou, S. Barbiers and H.-M. Gärtner (eds), 189–208. Amsterdam: John Benjamins.
- Lasnik, H. and R. Fiengo. 1974. On complement object deletion. *Linguistic Inquiry* 5: 535–572.
- Lasnik, H. and T. Stowell. 1991. Weakest crossover. *Linguistic Inquiry* 22: 687–720.
- Lasnik, H. and J. Uriagereka. 1988. *A Course in GB Syntax*. Cambridge MA: The MIT Press.
- Levin, J. 1983. Government relations and the structure of INFL. In *MIT Working Papers in Linguistics* 5, I. Haik and D. Massam (eds), 121–150. Cambridge MA: Department of Linguistics and Philosophy, MIT.
- Levin, J. 1984. Government relations and the distribution of empty operators. In *Proceedings of NELS 14*, C. Jones and P. Sells (eds), 294–305. Amherst MA: GLSA.
- Levine, R. D. 1984a. A note on right node raiding, *tough* constructions, and reanalysis rules. *Linguistic Analysis* 13: 159–172.
- Levine, R. D. 1984b. Against reanalysis rules. *Linguistic Analysis* 14: 3–30.
- López, L. 2002. On agreement: Locality and feature valuation. In *Typological Approaches to Language Universals*, A. Alexiadou (ed.), 165–210. Amsterdam: John Benjamins.
- Manzini, M. R. 1998. A minimalist theory of weak islands. In *The Limits of Syntax*, P. W. Culicover and L. McNally (eds), 185–209. San Diego CA: Academic Press.
- Martin, R. 1996. A Minimalist Theory of PRO and Control. PhD dissertation, University of Connecticut, Storrs.
- Massam, D. 1985. Case theory and the projection principle. PhD dissertation, MIT.
- McCloskey, J. 1990. Resumptive pronouns,  $\bar{A}$ -binding and levels of representation in Irish. In *The Syntax of the Modern Celtic Languages* [Syntax and Semantics 23], R. Hendrick (ed.), 199–248. New York NY: Academic Press.
- McCloskey, J. 2002. Resumption, successive cyclicity, and the locality of operations. In *Derivation and Explanation*, S.D. Epstein and T.D. Seeley (eds), 184–226. Oxford: Blackwell.
- McGinnis, M. 1998. Locality in A-Movement. PhD dissertation, MIT.
- Miller, P. H. and I.A. Sag. 1997. French clitic movement without clitics or movement. *Natural Language and Linguistic Theory* 15: 573–639.
- Montalbetti, M. 1984. After binding. PhD dissertation, MIT.
- Moro, A. 1997. *The Raising of Predicates*. Oxford: OUP.
- Nakamura, M. 1997. Object extraction in Bantu applicatives: Some implications for minimalism. *Linguistic Inquiry* 28: 252–280.

- Nanni, D. L. 1978. The *Easy* Class of Adjectives in English. PhD dissertation, University of Massachusetts, Amherst.
- Nanni, D. L. 1980. On the surface syntax of constructions with *easy*-type adjectives. *Language* 56:568–581.
- Nissenbaum, J. 2001. Investigations of Covert Phrasal Movement. PhD dissertation, MIT.
- Nunberg, G., I.A. Sag and T. Wasow. 1994. Idioms. *Language* 70:491–538.
- Oehrle, R. T. 1975. The Grammatical Status of the English Dative Alternation. PhD dissertation, MIT.
- Ouhalla, J. 1993. Subject extraction, negation, and the anti-agreement effect. *Natural Language and Linguistic Theory* 11:477–518.
- Pesetsky, D. 1982. Paths and Categories. PhD dissertation, MIT.
- Polinsky, M. and E. Potsdam. 2001. Long-distance agreement and topic in Tsez. *Natural Language & Linguistic Theory* 19:583–646.
- Postal, P. M. 1971. *Cross-over Phenomena*. New York NY: Holt, Reinhart and Winston.
- Postal, P. M. 1974. *On Raising*. Cambridge MA: The MIT Press.
- Postal, P. M. 1997. Strong cross-over violations and binding principles. Paper presented at ESCOL 1997, Yale University, November 1997. Ms., New York University. Available at: <http://www.nyu.edu/gsas/dept/lingu/people/faculty/postal/papers/crossovr.rtf>.
- Postal, P. M. 1998. *Three Investigations of Extraction*. Cambridge MA: The MIT Press.
- Postal, P. M. 2004. *Skeptical Linguistic Essays*. Oxford: OUP.
- Postal, P. M. and J.R. Ross. 1971. ¡Tough movement Si, tough deletion No! *Linguistic Inquiry* 2:544–546.
- Potsdam, E. and J.T. Runner. 2001. Richard returns: Copy-raising and its implications. In *Papers from the 37<sup>th</sup> Regional Meeting of the Chicago Linguistic Society*, M. Andronis, C. Ball, H. Elston and S. Neuvel (eds), 206–222. Chicago IL: Chicago Linguistic Society.
- Reinhart, T. 2000. Strategies of anaphora resolution. In *Interface Strategies*, H. Bennis, M. Everaert and E. Reuland (eds), 295–325. Amsterdam: Royal Academy of Arts and Sciences.
- Reinhart, T. and E. Reuland. 1991. Anaphors and logophors: An argument structure perspective. In *Long-distance Anaphora*, J. Koster and E. Reuland (eds), 283–321. Cambridge: CUP.
- Reinhart, T. and E. Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24:657–720.
- Reuland, E. 2001. Primitives of binding. *Linguistic Inquiry* 32:439–492.
- Rezac, M. 2003. The fine structure of cyclic Agree. *Syntax* 6:156–182.
- Rezac, M. 2004a. Elements of Cyclic Syntax: Agree and merge. PhD dissertation, University of Toronto.
- Rezac, M. 2004b. Agree and merge. Ms., University of the Basque Country (UPV-EHU), Vitoria-Gasteiz. Available at <http://ling.auf.net/lingBuzz/000041>.
- Richards, N. 2001. *Movement in Language: Interactions and architectures*. Oxford: OUP.
- Rizzi, L. 1982. *Issues in Italian Syntax*. Dordrecht: Foris.
- Rizzi, L. 1986. Null objects in Italian and the theory of *pro*. *Linguistic Inquiry* 17:501–557.
- Rizzi, L. 1990. *Relativized Minimality*. Cambridge MA: The MIT Press.
- Rizzi, L. 1997. The fine structure of the left periphery. In *Elements of grammar*, L. Haegeman (ed.), 281–337. Dordrecht: Kluwer.
- Rizzi, L. Forthcoming. On the form of chains: Criterial positions and ECP effects. In *Wh-Movement on the Move*, L. L.-S. Cheng and N. Corver (eds). Cambridge MA: The MIT Press.
- Romero, M. 1997. Focus and Reconstruction Effects in *Wh*-phrases. Doctoral dissertation, University of Massachusetts, Amherst.

- Rosenbaum, P. S. 1965. The Grammar of English Predicate Complement Constructions. PhD dissertation, MIT.
- Ross, J. R. 1967. Constraints on Variables in Syntax. PhD dissertation, MIT.
- Rullmann, H. and S. Beck. 1998. Reconstruction and the interpretation of *which*-phrases. In *Proceedings of the Tübingen Workshop on Reconstruction* [Arbeitspapiere des Sonderforschungsbereichs 340, #127], G. Katz, S.-S. Kim and H. Winhart (eds), 223–256. University of Tübingen and Stuttgart.
- Sauerland, U. 1998. The Meaning of Chains. PhD dissertation, MIT.
- Sauerland, U. 2004. The interpretation of traces. *Natural Language Semantics* 12: 63–127.
- Schachter, P. 1981. Lovely to look at. *Linguistic Analysis* 8: 431–448.
- Shlonsky, U. 1992. Resumptive pronouns as last resort. *Linguistic Inquiry* 32: 443–468.
- Svenonius, P. 2000. Quantifier movement in Icelandic. In *The Derivation of VO and OV*, P. Svenonius (ed), 255–292. Amsterdam: John Benjamins.
- Svenonius, P. 2004. On the edge. In *Peripheries: Syntactic edges and their effects*, D. Adger, C. de Cat and G. Tsoulas (eds), 259–287. Dordrecht: Kluwer.
- Tellier, C. 2001. On some distinctive properties of French parasitic gaps. In *Parasitic Gaps*, P. W. Culicover and P. M. Postal (eds), 341–369. Cambridge MA: The MIT Press.
- Terence Langendoen, D., N. Kalish-Landon and J. Dore. 1973. Dative questions: A study in the relation of acceptability to grammaticality of an English sentence type. *Cognition* 4: 451–478.
- Uriagereka, J. 2000. In defense of deep structure. Ms., University of Maryland, College Park.
- Watanabe, A. 2000. Feature copying and binding: Evidence from complementizer agreement and switch reference. *Syntax* 3: 159–181.
- Wilder, C. 1991. *Tough*-movement constructions. *Linguistische Berichte* 132: 115–132.
- Williams, E. 1980. Predication. *Linguistic Inquiry* 11: 203–238.
- Williams, E. 1983. Syntactic vs. semantic categories. *Linguistics and Philosophy* 6: 423–446.
- Wurmbrand, S. 2001. *Restructuring and Clause Structure*. Berlin: Mouton de Gruyter.

# Spanish existentials and other accusative constructions\*

Miguel Rodríguez-Mondoñedo  
University of Connecticut

## Abstract

Spanish is split in two dialects with respect to agreement in Existential Constructions (SEC): SI and SII. In SI the verb has default agreement, but in SII, it agrees with the ACC internal nominal. Both SI and SII ban [person] nominals, even with list-readings. I propose that SECs have a  $\nu$ P, and  $\nu$  has only [number]. Then [person] nominals are not allowed, given that that  $\varphi$ -incomplete heads cannot Case-value  $\varphi$ -complete nominals. In SII, T has an interpretable [person] feature, and can probe  $\nu$ , producing the effect of object-agreement, since T has only one uninterpretable feature, [number], as small  $\nu$  does. In SI, small  $\nu$  ( $\varphi$ -incomplete) cannot value the  $\varphi$ -features of T ( $\varphi$ -complete); therefore, T needs to resort to default agreement.

## o. Introduction

In Spanish Existential Constructions (SEC) (1a), the internal nominal (which corresponds to the so called “associate” in English) receives Accusative Case (ACC), as we can see from the presence of the ACC clitic (CL) in (1b):

- (1) a. Hay un hombre en la habitación  
Is a man in the room  
There is a man in the room.  
b. Lo hay  
CL-ACC is

In addition, Spanish is split in two dialects with respect to SEC. In Spanish Dialect I (SI) the verb has default agreement (3rd person, singular):

- (2) Hubo dos hombres en la fiesta *SI*  
was two men at the party  
There were two men at the party.

But in Spanish Dialect II (SII), the verb agrees with the ACC nominal, even if this is a clitic:<sup>1</sup>



- (3) a. Hubieron dos hombres en la fiesta      *SII*  
       were        two men        at the party  
       There were two men at the party.
- b. Los            hubieron  
           CL-ACC    were

Given that the nominal [*dos hombres*] is Accusative, as shown by the cliticization, the data are a direct challenge for theories that link together Agreement and Case (like Chomsky 2000, 2001a,b). In *SII*, the nominal seems to be in agreement with *T*, but *T* cannot be its Case-licensor because *T* does not value ACC. This means that Chomsky's 2000 account of English Existential constructions cannot be directly extended to Spanish.

In this paper, I will present an analysis of SEC that nevertheless supports the relation between Case and Agreement, as well as the operation Agree (Chomsky 2000, 2001a,b), by postulating a small  $\nu$  in SEC. The proposal is compatible with other studies that have proposed that there are several types of small  $\nu$ , with different properties (see Boeckx 2003, Legate 2003 among others).

I will contend that small  $\nu$  is  $\varphi$ -incomplete. This small  $\nu$  will probe the internal nominal and will check its Case only if the nominal is also  $\varphi$ -incomplete. This proposal predicts that nominals that are  $\varphi$ -complete, for instance proper nouns or some personal pronouns, will be banned from *haber* sentences, given the inability of this  $\varphi$ -incomplete small  $\nu$  to check the Case of  $\varphi$ -complete nominals; I demonstrate that the prediction is borne out – the elements in question are disallowed in SEC even with list readings, in contrast with English.<sup>2</sup>

I will argue that the difference in agreement between the two dialects comes from a difference in the specification of  $\varphi$ -features in the corresponding Tense (*T*). We will see that as a result of this difference, in *SII*, the operation Agree can value the  $\varphi$ -feature of *T* using the small  $\nu$  as a goal, but in *SI* Agree fails to do so, and therefore *T* in this dialect has to resort to a mechanism of default agreement. Interestingly, the verb is irregular in *SI*, but it tends to regularize in *SII*, a fact that will be attributed to the difference in the process of  $\varphi$ -valuation.

This analysis will also allow me to explain a number of additional properties and procedures in Spanish, including some correlations between *SI* and *SII* with respect to agreement in temporal existential constructions, raising verbs with *haber* (have, be-existential) and certain issues regarding the syntax of *estar* (be-locative) and *parecer* (seem). I will also suggest that my proposal, if extended to all Spanish small  $\nu$ s, in the relevant respects, explains the syntax of ACC Spanish objects, in particular, it predicts that, if the  $\varphi$ -incompleteness of the small  $\nu$  prevents this category from valuing the Case of direct object (DO) when the DO is  $\varphi$ -complete, then the DO must raise to check its Case with another head (a dative head), which is allowed in a small  $\nu$  with external argument, explaining the presence of the preposition that precedes these objects.



The paper is organized in the following way. In Section 1, I will give arguments in favor of the idea that *haber* is a subject-less verb. In Section 2 I will present the proposal that there is a small *v* in SEC. In Section 3, I will refine the proposal, by proposing that the small *v* in *haber*-sentences is  $\varphi$ -incomplete and that, in SII but not in SI, T has an interpretable  $\varphi$ -feature; some consequences of this idea will also be discussed with respect to temporal existential constructions and raising verbs, as well as some dialectal differences in Spanish. In Section 4 I will suggest that the source for the small *v* is the necessity for Spanish to license Small Clauses with ACC, a fact that is very well attested. In Section 5, I will provide an account of certain peculiarities of the Definiteness Effect in Spanish, using the special type of small *v* I am proposing, as well as an explanation for the syntax of ACC objects. Section 6 presents the conclusions.

## 1. The nominal in a *Haber*-sentence is not its subject

There is a long standing tradition among Spanish grammarians in favor of considering the internal nominal of SEC an object, not a subject – see Fernández-Soriano and Táboas-Baylin (1999: 1754–1759) for a review of traditional grammar analyses of *haber* sentences, and also Suñer 1982a,b, Torrego 1984, Díaz 2004, among others. The main arguments are the post verbal position and the ACC cliticization. However, this position has been challenged occasionally.<sup>3</sup> In this section I will give arguments that the internal nominal is not a subject. An important question that needs to be addressed first is what I mean by “subject”. In the tradition started by Chomsky 1965, “subject” is not a primitive notion, but it is defined structurally, namely, it is whatever is in [Spec, TP].<sup>4</sup> I will adopt this notion here.

Given that, at first glance, it seems obviously true that the nominal in SEC is not the subject: it is post-verbal, and since Spanish is a SVO language, this could mean that the nominal is not in [Spec, TP]. There could be, however, other reasons why the nominal is post-verbal (and Spanish does accept post-verbal subjects, as it is well known). First, it is possible that the verb raises overtly to a higher position, leaving behind the nominal.<sup>5</sup> Second, the nominal could raise to [Spec, TP] covertly, which would mean that it is a LF-subject. In fact, we will see that in some cases the nominal precedes the verb overtly. In spite of these possibilities, I will claim that the internal nominal in Spanish *haber*-sentences is not a subject in any point in the syntactic derivation. I take this to mean that (i) the nominal is not in [Spec, TP] in overt Syntax, (ii) the nominal is not in [Spec, TP] in LF, and (iii) when the nominal is fronted, still it is not in [Spec, TP] (but in a higher projection).

### 1.1 The nominal is not in [Spec, TP] in overt syntax

In order to show that the internal nominal in *haber*-sentences is not in [Spec, TP], I will compare *haber* with *estar*, a closely related verb that does have a subject.<sup>6</sup>

Remember that in English we have two possibilities for existentials:

- (4) a. There is a man in the room.  
b. A man is in the room.

In Spanish, (4a) and (4b) have different verbs, *haber* and *estar*, as illustrated below:<sup>7</sup>

- (5) a. *Hay* un hombre en el jardín  
Is a man in the garden  
There is a man in the garden.  
b. Un hombre *está* en el jardín  
A man is in the garden  
A man is in the garden.

This difference suggests that the nominal has a status in *estar*-sentences that is different from the status it has in *haber*-sentences. To be more precise, the nominal is in [Spec, TP] with *estar*, but not with *haber*.

One argument that the nominal is not in [Spec, TP] with *haber*-sentences is provided by Díaz 2004. Taking advantage of the fact that extraction from  $\theta$ -positions is much easier than extraction from non- $\theta$ -positions, Díaz (2004: 70–71), who is investigating SI, presents this contrast between extraction from *haber* and *estar*:

- (6) a. Hay [algunos libros de sintaxis] en mi cuarto SI  
There-is some books of syntax in my room  
There are some books about Syntax in my room.  
b. ¿De qué hay [algunos libros t] en mi cuarto?  
Of what there-is some books in my room  
About what there are some books in my room.  
(7) a. [Algunos libros de sintaxis] están en mi cuarto.  
Some books of Syntax are in my room  
Some books about Syntax are in my room.  
b. \*¿De qué están [algunos libros t] en mi cuarto?  
Of what there-is some books in my room  
About what are the books in my room?  
[Adapted from Díaz 2004: 70–71]

In (6) wh-extraction is possible, which means that the post-verbal nominal is in its  $\theta$ -position. However, in (7), wh-extraction is not possible, which can be accounted for if the preverbal nominal is in [Spec, TP]. These data can be replicated in SII, where wh-extraction is possible despite the fact that the nominal is in agreement with the verb (which is normally considered a property of subjects):

- (8) a. Habían algunos libros de sintaxis en mi cuarto. SII  
There-were some books of syntax in my room  
There were some books about Syntax in my room.

- b. ¿De qué habían algunos libros en mi cuarto? *SII*  
 Of what there-were some books in my room  
 About what there were some books in my room.

Additional evidence comes from deletion in coordinate structures. In some instances, the Spanish verb can raise over the subject, which stays in [Spec, TP]. If *haber*-sentences were this type of sentence, and its nominal were in [Spec, TP], it should be possible to delete it when a *haber*-sentence is coordinated with another sentence whose post-verbal subject is identical to the nominal in the *haber*-sentence. As observed by Suñer 1982a: 104), *haber*-sentences fail to allow deletion under identity, even in *SII*:

- (9) \* Habían y olían agradablemente dos docenas de rosas *SII*  
 There-were and smelled pleasingly two dozens of roses  
 Two dozens of roses were there and smelled pleasingly.  
 [Suñer 1982a: 104, with slight changes]

This means that the nominal in the first conjunct (which is a *haber*-sentence) is not in the same position as the nominal in the second conjunct. If in the second conjunct the nominal is in [Spec, TP], it cannot be in [Spec, TP] in the first one. Compare this example with (10):

- (10) Irradiaban luz y olían agradablemente dos docenas de rosas  
 gave-out light and smelled pleasingly two dozens of roses  
 [Suñer 1982a: 121 ff. 95]

In this example, the first verb does have a subject, so it can be deleted under identity in the coordinated structure. Notice that the nominal in *estar*-sentences can undergo deletion under identity, which is evidence that it is in [Spec, TP]:

- (11) Las rosas estaban en la sala y olían agradablemente  
 The roses were in the room and smelled pleasingly

From these data we conclude that the nominal is not overtly in [Spec, TP] in *haber*-sentences (in contrast to *estar*-sentences), thus the post-verbal position cannot be derived by raising the verb over this position.

## 1.2 The nominal is not in [Spec, TP] in LF

Regarding the position of the nominal in LF, we have some evidence from control structures. A subject PRO can be interpreted as coreferential with the matrix subject (obtaining *de se* readings), as in (12):

- (12) Dos hombres<sub>i</sub> creen PRO<sub>i</sub> estar en la luna  
 Two men believe to be in the moon

This is not possible if the embedded verb is existential *haber* (in *SI* and *SII*):

- (13) \*Dos hombres<sub>i</sub> creen PRO<sub>i</sub> haber en el jardín  
 Two men believe to be in the garden

I take this as evidence that the nominal in *haber*-sentences is not a subject even in LF. As expected, *estar* allows Control (and a *de se* reading). This is evidence that the nominal is a subject with *estar*:

- (14) a. Un hombre<sub>i</sub> cree PRO<sub>i</sub> estar en el jardín  
 A man believe to be in the garden  
 b. \*Un hombre<sub>i</sub> cree PRO<sub>i</sub> haber en el jardín  
 A man believe to be in the garden

### 1.3 When the nominal is fronted, it is not in [Spec, TP]

Up to this point, we have evidence that the internal nominal in *haber*-sentences cannot be either an overt subject or an LF subject, that is, it does not undergo A-movement outside VP at any point of the derivation. Sometimes, however, we can front the nominal to the left, but this requires contrastive intonation – as in many cases of topicalization – which is represented with capital letters in (15b). Under normal intonation, the sentence is ungrammatical if the nominal is fronted (15a) – as discussed in Torrego (1984:335), Runner (1992:288) and others:<sup>8</sup>

- (15) a. ?? Un hombre había en el jardín  
 A man was in the garden  
 b. UN HOMBRE había en el jardín  
 A MAN was in the garden  
 A MAN there was in the garden.

Given that A-movement does not receive contrastive intonation, this fronting cannot be to [Spec, TP]. The same conclusion comes from raising constructions. As observed by Suñer (1982a: 104) and Torrego (1984:332), in both dialects, if a nominal is fronted in raising constructions with *haber*, it needs contrastive intonation to be fully acceptable – thus, the fronting of the nominal in (16b) cannot be to [Spec, TP]. I take it to be a result of A'-movement:

- (16) a. ?? Un hombre parece haber en el jardín  
 A man seems to be in the garden  
 b. UN HOMBRE parece haber en el jardín  
 A man seems to be in the garden

As expected, if the nominal stays in situ, no special intonation is required:

- (17) Parece haber un hombre en el jardín  
 Seems to be a man in the garden  
 There seems to be a man in the garden.

These data indicate that it is not possible for the nominal to occupy [Spec, TP] in *haber*-sentences. This sharply contrasts with *estar*-sentences:

- (18) a. Un hombre estaba en el jardín  
A man was in the garden  
A man was in the garden.
- b. Un hombre parece estar en el jardín  
A man seems to be in the garden  
A man seems to be in the garden.

Here the nominal raises to the higher [Spec, TP]. No contrastive intonation is needed.

Furthermore, *haber*, but not *estar*, is subject to the Definiteness Effect (DE) – see Bull 1943, Utley 1954, Luque Moreno 1978, among others:<sup>9</sup>

- (19) a. \*Hay el hombre en el jardín  
Is the man in the garden  
There is a man in the garden.
- b. El hombre *está* en el jardín  
The man is in the garden  
A man is in the garden.

In *haber*-sentences, the DE is preserved even if we front the nominal:

- (20) a. \*EL HOMBRE había en el jardín  
The man was in the garden  
THE MAN there was in the garden.
- b. UN HOMBRE había en el jardín  
A man was in the garden  
A MAN there was in the garden.

Given that, when the nominal undergoes A-movement the DE is cancelled (as in English), the preservation of the DE in this fronting indicates that we are not dealing here with A-movement. This confirms that *estar*-sentences are the Spanish counterpart of non-expletive English existentials, but not *haber*-sentences like (20b).

#### 1.4 Fronting the verb

We have seen evidence that indicates that the internal nominal does not undergo A-movement in *haber*-sentences, but it does in *estar*-sentences:

- (21) a. Un hombre estaba en el jardín  
A man was in the garden  
A man was in the garden.

- b. Había un hombre en el jardín  
     was a man in the garden  
     There was a man in the garden.

Thus, the nominal is in a preverbal position with *estar*. However the word order of the subject can be altered in Spanish. We can have the nominal in the preverbal or postverbal position with *estar* too:

- (22) a. El hombre estaba en el jardín  
         The man was in the garden  
       b. Estaba el hombre en el jardín  
         Was the man in the garden

We can account for this if we assume that the verb is in a higher position, leaving behind the subject in (22b).<sup>10</sup> This is quite generally possible in Spanish:

- (23) Caminó un hombre en el jardín  
       walked a man en el jardín  
       A man walked in the garden.

It is worth-noting, however, that the possibility of fronting the verb, although possible, is not really free in Spanish; these sentences are subject to certain restrictions and they may require special intonation – this is true for (23) as well as (22b). I will not attempt to characterize the proper contexts for this fronting; I only intend to establish that this word order exists, maybe for discourse reasons – for an extensive discussion of Spanish word order, see Contreras 1976, 1991, Rivero 1980, Hernanz and Brucart 1987, Olarrea 1996, Ordóñez 1997, Ordóñez and Treviño 1999, Zubizarreta 1998, Goodall 2002, Zagana 2002, among others.<sup>11</sup>

I propose a scenario like (24) and (25) regarding the difference between *haber* and *estar* with respect to the word order. Here, I assume that the presence of a nominal in [Spec, TP] with *haber* makes the sentence ungrammatical; in addition, in constructions where a nominal raises above *haber*, I assume that the nominal undergoes A'-movement above TP:

- (24) a'. \* [TP Un hombre *había* en el jardín ]  
         A man was in the garden  
       a''. [XP UN HOMBRE[TP *había* en el jardín ] ]  
         A man was in the garden  
       b. [TP *Había* un hombre en el jardín ]  
         Was a man in the garden
- (25) a. [TP Un hombre *estaba* en el jardín ]  
         A man was in the garden

- b. [<sub>XP</sub> *Estaba* [<sub>TP</sub> *un hombre en el jardín* ]]  
Was a man in the garden

From the previous discussion, we can conclude that the nominal of the verb *haber* cannot be the subject. Given that the nominal is not a subject (neither in SI nor in SII), it is not a surprise that it receives ACC, as shown from the cliticization data below:

- (26) a. Había unas mujeres en la fiesta SI  
 Was some women at the party  
 There were some women at the party

- b. Las CL-FEM-PLU-ACC había was

- (27) a. Habían unas mujeres en la fiesta SII  
 Were some women at the party  
 There were some women at the party

- b. Las habían  
CL-FEM-PLU-ACC were

Hence, as noted above, Chomsky's solution for English Existential constructions, in which the associate of *there* undergoes Agree and is Case-checked by T (in non ECM-constructions), cannot be directly applied to Spanish. Since T is the head that values the Case of the unique nominal, the expectation is that the nominal will bear NOM and it will agree with T.

For SI, none of these expectations is fulfilled. In this dialect the nominal bears ACC and does not agree with the verb:<sup>12</sup>

- (28) a. Había unos niños en el parque *SI*  
           was some kids in the park  
           There were some kids in the park.

- b. Los había  
CL-MAS-PLU-ACC was

In SII, the nominal also receives ACC, but it agrees with the verb (and the agreement is preserved even when the object is cliticized):

- (29) a. Habían unos niños en el parque III  
           were some kids in the park  
           There were some kids in the park.

- b. Los habían  
CL-MAS-PLU-ACC were

Given this state of affairs, it seems clear that, if we want to maintain Chomsky's Agree/Case system, we must provide a source for the ACC in both dialects, and explain why the nominal agrees with the verb in SII but not in SI. We will address these issues in the next section.

## 2. A small $\nu$ in existentials

In this section I will present the idea that *haber*-sentences in Spanish have a small  $\nu$  that is responsible for the ACC Case. Actually, under Chomsky's Agree/Case system, given that we have an ACC object, there is no choice but to postulate a functional head with  $\phi$ -features and the ability to probe the object, that is, small  $\nu$ :

- (30) a. Hay un hombre en la habitación  
           Is a man in the room  
           There is a man in the room.

- (31) [TP T- $\phi$  [ $\nu$ P  $\nu$ - $\phi$  [VP hay [SC [un hombre] [en la habitación]]]]]

In this system, T and  $\nu$  have a set of uninterpretable  $\phi$ -features (person, number, gender) that are unvalued. They probe into their c-command domain, looking for goals with valued  $\phi$ -features – a nominal, for instance. Once they match a goal, the goal will value their uninterpretable  $\phi$ -feature, and, as a reflex of this, the goal will get its uninterpretable Case-feature valued. A probe cannot be left with its  $\phi$ -feature unvalued, since Spell Out will not be able to delete them, producing a crash. A goal must value its Case-feature, for the same reason. If T is the probe, the goal will be NOM; if  $\nu$  is the probe, the goal will be ACC. This combination of Match and ( $\phi$  and Case) Valuation is called Agree.

Provisionally, let me say that the operation Agree applies as follows in (30) (I will change some details later). The small  $\nu$  probes the internal nominal, and it values the  $\phi$ -features of this nominal under Agree:<sup>13</sup>

- (32) a. Match
- |               |   |                      |
|---------------|---|----------------------|
| $\nu$         |   | <i>un hombre</i>     |
| [ $\phi$ : _] | → | [ $\phi$ : 3p, sing] |
|               |   | [Case: _]            |
- b. Valuation
- |                      |  |                      |
|----------------------|--|----------------------|
| $\nu$                |  | <i>un hombre</i>     |
| [ $\phi$ : 3P, SING] |  | [ $\phi$ : 3p, sing] |
|                      |  | [Case: ACC]          |

Given this proposal, some problems immediately arise. First, according to Chomsky 1995 (see also Holmberg and Platzack 1995),  $\nu$  has the lexical property of having an External argument and valuing the ACC of the internal one. The small  $\nu$  that we are proposing can value the ACC of the nominal but it does not have External argument. But Chomsky's  $\nu$  is only a way to capture Burzio's Generalization (BG). In fact, it is not a very strong one, since it leaves open a door to violate the generalization. Since, for Chomsky, BG is a lexical property of  $\nu$ , nothing prevents other kinds of  $\nu$  from having different lexical properties. In fact, if the lexical properties [external argument] and [valuing ACC] are assumed not to necessarily correlate, we expect four types of  $\nu$ :



- (33) a. [+external argument] and [+valuing ACC]  
 b. [+external argument] and [-valuing ACC]  
 c. [-external argument] and [+valuing ACC]  
 d. [-external argument] and [-valuing ACC]

Notice that at least two of them are attested: (33a) is Chomsky's 2000  $\ast v$  for transitive verbs, and (33d) is the unaccusative  $v$ . In addition, (33b) could be associated with unergative verbs (assuming that there is no cognate object, or that the cognate object does not receive ACC in narrow syntax).<sup>14</sup> If this line of reasoning is correct, the lack of a  $v$  like (33c) would be a gap in the paradigm. Of course, (33c) is perfectly suited for Spanish existentials.

In addition, we know that BG is violated in several languages and constructions (See Haider 1985, Yip, Maling and Jackendoff 1987, Marantz 1991, Reuland 2000, Woolford 2003, and many others). In fact, most researchers (including Burzio 2000) consider BG to be an epiphenomenon (see the papers in Reuland 2000).

It is also worth noting that Marantz 1991 derives BG from his theory of dependent Case: ACC is possible only when there is a second position available. That means that the notion of External role is not relevant, we just need a free position (that could be an expletive or even empty). This allows ACC in existential constructions, with no External role, but with a free position (in [Spec, TP]). Then, regarding BG, the remaining question is how Marantz's system fits in our proposal (we will return to this later).

There is another problem with (31–32): apparently, the  $\phi$ -features of T remain unvalued, so, under Chomsky's system, the sentence should be ungrammatical. We cannot say that a null expletive EXPL takes care of the  $\phi$ -features of T because expletives are base-generated in Spec, TP (Chomsky 2000, 2001a,b, Bošković 2002), so T cannot probe EXPL (in addition EXPL is supposed to be  $\phi$ -incomplete, unable to value the  $\phi$ -features of T).<sup>15</sup>

According to Chomsky 2000, in English existential sentences, once T has valued its  $\phi$ -features by probing the nominal, the expletive THERE, which is  $\phi$ -incomplete, can probe T and value its own [person] feature. This means that valued heads can be goals:

- (34) There                      T                      are                      two men                      in the garden  
       [person] —————> [person]                      [person]  
                                          [number]                      [number]

If any head with valued  $\phi$ -features may be the goal for a probe with unvalued  $\phi$ -features, given that small  $v$  is already valued under (32), we can value the  $\phi$ -features of T in sentence (30) using the small  $v$  and Agree:

- (35) a. Match
- |                    |                   |                              |
|--------------------|-------------------|------------------------------|
| T                  |                   | v                            |
| $[\varphi: \quad]$ | $\longrightarrow$ | $[\varphi: 3p, \text{sing}]$ |
- b. Valuation
- |                              |                   |                              |
|------------------------------|-------------------|------------------------------|
| T                            |                   | v                            |
| $[\varphi: 3p, \text{SING}]$ | $\longrightarrow$ | $[\varphi: 3p, \text{sing}]$ |

This is possible because the  $\varphi$ -features of  $\nu$  are still there after it undergoes Agree with the nominal, since the deletion procedure applies only at the point of Spell-Out. Although they have been valued already, the  $\varphi$ -features have not been deleted because Spell Out applies just at the end of a strong phase. I assume that the small  $\nu$  in question is not the head of a strong phase, because it does not have an External argument.<sup>16</sup>

Notice that the small  $\nu$  in question does not have any [Case: ] to value. At the first sight, this is trivial ( $\nu$  just doesn't have to check Case), but it allows us to make a crucial observation: a head can get its  $\varphi$ -features valued without assigning any Case. This seems to be true for T in SI and SII:<sup>17</sup>

- (36) a. Lluève  
rains  
It rains.  
b. [TP T-φ [VP Lluève]

In Spanish (SI and SII), T with  $\varphi$ -uninterpretable features can get a default value [3p, SING] if no head with  $\varphi$ -interpretable features is available in its c-command domain.<sup>18</sup> This default value could be implemented via a pronominal subject clitic (SCL) that values the  $\varphi$ -features of T, rendering inactive its ability to value NOM. The morphological manifestation of this subject clitic could be the [3p, SING] suffix that we find in these verbs, in accordance with similar ideas developed in Alexiadou and Anagnostopoulou 1998, Kato 1999, 2000, Picallo 1998, Ticio 2004, Díaz 2004. In principle, this subject clitic could replace the idea of a null expletive as responsible for valuing the  $\varphi$ -features of T, and it also could render unnecessary the idea of default agreement. We will see in the next section, however, that these possibilities can be distinguished from each other, and that they may produce different effects.

Before that, let me emphasize another assumption to be in position to fully assert my proposal. As has been observed (Boeckx 2003), the requirement for a head with uninterpretable  $\phi$ -features (the probe) to value its features in order to value the Case-feature of the goal is a way to encode the Inverse Case Filter – that is, the requirement for a traditional Case-assigner to discharge its Case to an assignee (Bošković 1997, 2002) – in Chomsky’s Case/Agree system. This also gives us a way to derive a weak version of the BG (actually Chomsky 2000 suggests this too), without precluding the possibility of several types of small  $\nu$  (as in (33)).

Assuming that T is always present in a sentence (nothing really new here), if a second  $\varphi$ -head is present, there are only two (grammatical) options:

- (37) i. There is another argument between T and the second  $\varphi$ -head (the External argument), and T values its  $\varphi$ -features by probing this argument.
- ii. There is no other argument between T and the second  $\varphi$ -head, then, either:
  - a. T values its  $\varphi$ -features by probing the second head (provided that this head has already valued its own  $\varphi$ -features probing the internal argument), or else
  - b. A subject clitic/expletive/default agreement values the  $\varphi$ -features of T.

According to (37i), we need an external argument to value the  $\varphi$ -features of T, since the internal argument is in the domain of another probe. Obviously, this makes the BG an epiphenomenon, since it depends on the necessity of T to value its  $\varphi$ -features, but it can be violated if the  $\varphi$ -features are valued using a goal different than the External argument. This also entails Marantz's 1991 suggestion that an independent "empty" position (in this case, [Spec, T]) can be enough to license the presence of ACC.

According to (37ii) a probe can in turn be visible as a goal for another c-commanding probe, even if it has no Case feature, presumably violating the Activation Condition (AC) – according to which a goal must have an uninterpretable feature to undergo agreement. Chomsky must have some solution in mind; otherwise, his idea that the expletive probes T in English existentials constructions would violate AC in (34), since T has no Case-feature. Notice, however, that Spell Out has not applied yet, which means that the uninterpretable  $\varphi$ -features of T have not yet been deleted. Since for Chomsky, AC depends on the presence of any uninterpretable feature, T is still active since its  $\varphi$ -features have not been deleted. Since the same is true in (37ii), there is no problem here. There is another possibility. Rather than postulate that uninterpretable Case features render the goal visible for Agree (as in Chomsky 2000, 2001a,b), we could propose that valued Case features make the goal invisible for Agree. In other words, we can have a Deactivation Condition:

- (38) Deactivation Condition  
Elements with valued Case features are invisible for Agree.

This has the merit of allowing heads without Case features to be used as goals – as long as they have the proper set of  $\varphi$ -features – without losing the idea that nominals become inactive after Agree/Case checking. This could be in conflict with Multiple Agree systems, however. I will leave the issue open.

Having established the plausibility of (35) in Chomsky's Agree system, in the next section, I turn to the dialectal difference with respect to agreement. I will slightly adjust (35) to account for it.

### 3. Object agreement: existentials in SI and SII

In this section, I will present an analysis of the dialectal difference in Spanish with respect to agreement in existential constructions. I will propose that the small *v* in SEC is  $\varphi$ -incomplete (it does not have [person]). In addition, an interpretable [person] in SII-T will account for the dialectal differences in agreement.

Remember that there are two dialects in Spanish with respect to agreement in existential constructions:

- (39) Hubo dos hombres en la fiesta SI  
 was two men at the party  
 There were two men at the party.

- (40) Hubieron dos hombres en la fiesta SII  
 were two men at the party  
 There were two men at the party.

This difference has been attested by several researchers, and it seems to be present in Spanish at least from the XIV century (Kany 1951, Suñer 1982b, Fernández-Soriano and Táboas-Baylin 1999, among many others). In the present times, SI is predominant in Peninsular Spanish (PS), whereas SII is predominant in Latin American Spanish (LAS) – see for instance, Bello (1847:§781) who denounces this agreement as an “almost universal vice”. But SII is also present in PS as a non standard variety, and SI is usually imposed as a prescriptive rule in LAS – so, in LAS, it is not hard to find educated speakers with both SI and SII.<sup>19</sup>

Given that the social and geographical distribution of these varieties is complex,<sup>20</sup> I am using SI and SII to refer to the variety without and with agreement, respectively. Keep in mind, however, that SI and SII are really shorthands for a family of dialects that share the corresponding phenomenon. Although I will present some correlations between the difference in (39)-(40) and other properties of SI and SII, nothing prevents the dialects inside SI or SII to have differences in other aspects of their grammars.

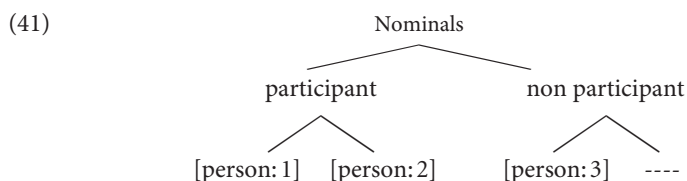
Under the current assumptions, the explanation for SII (40) is straightforward: the nominal values the  $\varphi$ -features of  $\nu$  (as a result of which the nominal gets ACC), and  $\nu$  values the  $\varphi$ -features of T. However, sentence (39) shows that in SI T cannot probe its goal, and therefore it gets a default value. Given that in both cases we have  $\nu$  (because there is ACC), the question is what could prevent T from valuing its  $\varphi$ -features by probing  $\nu$  in SI? To answer this question, let's turn to some restrictions on the internal nominal in *haber*-sentences.

### 3.1 Restrictions on the internal nominal and an $\phi$ -incomplete small v

Nominals that are specified with [person] are not possible inside *haber*-sentences. This means that there are nominals that do not have [person] feature, precisely the ones that are allowed under *haber*.

There is a long standing tradition, which can be traced back to Benveniste 1966a, arguing that the category of Person should be restricted to the participants in the speech act, that is, the First Person and the Second Person; under this perspective, the non-participant, the Third Person, is a non-person. This traditional view has been challenged, however. For instance, relying on data from an extensive cross-linguistic survey, Siewierska 2004 argues that excluding the Third Person “would severely skew our understanding of a number of facets of the category of person” (Siewierska 2004: 8), although she acknowledges that the Third Person has a distinct nature from the First Person and the Second Person. In a feature-based system, being non-person would mean that the item in question lacks a [person] feature, that is, it is  $\varphi$ -incomplete. I will adopt the view that some Third Person pronouns and some nominals, have a [person] feature, but I will also assume that a subset of Third Person pronouns and other nominals lacks this feature. This means that some nominals are  $\varphi$ -complete, but others are  $\varphi$ -incomplete (they lack [person]).

I assume the following classification of nominals with respect to [person] – see Harley and Ritter 2002, Adger and Harbour 2003, Alexiadou and Anagnostopoulou 2004, among others, for related proposals in relation with other languages:



As in the traditional view, if a nominal refers to a participant in the speech act, it will be marked with [person]. Notice that these nominals are very few, in fact, they are the First and Second Person pronouns. Notice further that First and Second Person pronouns are always interpreted as both specific and animate. It is natural to assume that this meaning is attached to the [person] feature they uncontroversially hold. In that sense, at least in some languages, non-participant nominals that are both specific and animate may also be specified with [person] feature, departing from the traditional view.<sup>21</sup> A language then may link the feature [person] with the semantic property of being both animate and specific, given that both characteristics are always connected with nominals that necessarily hold the [person] feature (the participants). Therefore, it can then be expected that the language would grant the feature [person] to all nominals that are both animate and specific, even if they refer to non-participants. This allows an interpretation of the [person] feature that is uniform across participants and non participants: being [person] means being specific and animate, and the particular value of the feature informs the corresponding participation in the speech act. According to this, only nominals that are not specific and animate will be  $\varphi$ -incomplete, that is, they will have no [person] feature. I contend that this is what happens in Spanish.

In that sense, for instance, a proper noun like *John*, which is both specific and animate, has an interpretable [person:3] feature. On the other hand, a nominal like *hombres* ‘men’, which is animate but non specific is  $\phi$ -incomplete, that is, it has no [person] feature. The same would hold, for example, for *azúcar* ‘sugar’, which is both non animate and non specific.

An interesting situation arises with the ACC clitic *lo*. This form is allowed under *haber*-sentences, as we have already observed:

- (42) a. Hay un hombre en el parque  
           is a man in the park  
           There is a man in the room.  
       b. Lo hay  
           CLITIC is

In this case, *lo* does not need to be specific (although it is animate, since it stands for ‘a man’). We assume, then, that here *lo* does not have a [person] feature. However, in other cases, as in clitic doubling, *lo* must be specific (as argued by Suñer 1988, among others), therefore, if it is also animate, it must have [person]:

- (43) Lo vi a Juan  
           CLITIC saw to John  
           I saw John.

Then, we assume two different forms for *lo*: one with [person] (as in (43)) and the other without [person] (as in (42)). Interestingly, in some Spanish dialects, the ACC clitic with [person], that is, the one that is specific and animate, has a morphological expression (*le*) different from *lo* without [person].<sup>22</sup> This is evidence that Spanish can express morphologically the split between nominals that are animate and specific, and nominals that are not.<sup>23</sup> I claim that it does so by using the feature [person].

In Spanish, specific and animate nominals, that is, [person] nominals, are precisely the kind of nominals that are banned from *haber*-sentences:<sup>24</sup>

- (44) \* Me/Te/Nos había  
           Me/Te/Us was  
           There was me/you/us.  
       (45) a. \* Hay Juan  
               Is John  
               There is John  
           b. \* Has tú  
               are you  
               There is you.

Notice that [person] nominals are not possible here even with list-readings. It is not the case that (44–45) have a different reading, these sentences are simply ungram-

matical, which is different from English, where the corresponding sentences are accepted with a list-reading (an observation that can be traced back to Milsark 1974). Therefore, assuming that the Definiteness Effect (DE) and the list-readings in existential constructions have a common explanation (as in McNally 1997), this restriction cannot be explained by using the DE – see section 5 for a more detailed discussion. I propose that the reason for this ban is that small  $\nu$  appears without the feature [person], and just with [number]:<sup>25</sup>

- (46)         $\nu$   
              [number]

This means that only objects that are not specified for [person] will be allowed in the context in question. If an internal nominal is specified for [person], small  $\nu$  will be able to probe it and then to value its own [number] feature, but it will not be able to value the [case] feature of the object, given Chomsky's 2000, 2001a,b suggestion that incomplete  $\varphi$ -features cannot value [case]. Notice that this requirement for probes must be relativized to the features of the goal. Small  $\nu$  is still "incomplete" (in the absolute sense) when it probes objects with no [person] feature, but it is complete with respect to the features of the goal. In other words, Chomsky's suggestion should be recast in this way:<sup>26</sup>

- (47) Condition on Case-valuation  
Only a probe P that matches all  $\varphi$ -features of a goal G can value the [case] feature of G.

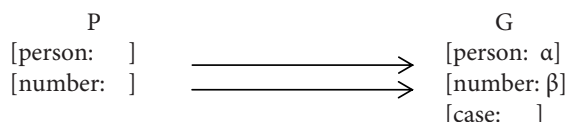
So far, this is common to SI and SII. A problem arises here. Now small  $\nu$  won't be able to value the  $\varphi$ -features of T because it is  $\varphi$ -incomplete. Here we are looking at the other side of valuation: from the goal to the probe. This situation is not covered by in (47). Provisionally let me assume a version of Béjar's (2003:65) Condition on valuation (where f=features, u=uninterpretable):

- (48) Condition on  $\varphi$ -valuation  
G(oal) values P(robe) if and only if all  $u \varphi$ -f(P) match  $\varphi$ -f(G)  
[Adapted from Béjar (2003: 65)]

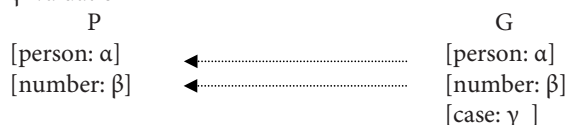
In other words, all the uninterpretable features of the probe P must match the  $\varphi$ -features of the goal G, in order for the uninterpretable features of the probe to get valued. (47)–(48) mean that there are two process of valuation under Agree: Case-valuation (which must satisfy (47)) and  $\varphi$ -valuation (which must satisfy (48)). In other words, the Agree operation has three steps:<sup>27</sup>

(49) Agree

## a. Match



## b. [case]-valuation

c.  $\varphi$ -valuation

Therefore, although (46) allows us to explain the [person] restriction on internal nominals in *haber*-sentences (given (47)), it gives us a new problem, because now we don't have a way to value the  $\varphi$ -features of T (given(48)). Let's put this aside for a moment.

There is another difference between SI and SII. In SII SEC, but not in SI SEC, the T can have a person value that is different from the one in the nominal. In fact, as discussed, the nominal here does not have [person] (it is non specific), but T has:

- (50) *Habemos dos estudiantes en la clase* SII  
*Habéis*  
 Are-1P-PLU two students in the class  
 Are-2P-PLU  
*Lit:* We there are two students in the class.

It is important to notice that (50) still is an existential sentence. First, it is subject to the Definiteness Effect:

- (51) \**Habemos los estudiantes en la clase* SII  
 Are-1P-PLU the students in the class

Second, it is still subjectless, in fact, it is impossible to use an overt subject (either preverbal or postverbal):

- (52) a. \**Nosotros habemos dos estudiantes en la clase* SII  
 We are-1P-PLU two students in the class  
 b. \**Habemos nosotros dos estudiantes en la clase* SII  
 Are-1P-PLU we two students in the class

This behavior allows us to confirm that (50) is not the Spanish equivalent of any of these English sentences (where the speaker is a student):<sup>28</sup>



- (53) a. We have two students in the class.  
 b. We are two students in the class.

(50) is, then, truly an existential sentence. Given that [person] nominals are not allowed under *haber*, the question is where this [1p] and [2p] comes from? The situation is even more puzzling if we take into consideration the fact that this dissociation between the person in T and the person in the nominal agreeing with T is possible with other verbs in both SI and SII. As discussed in Hurtado 1984, Fernández-Soriano 1989, Contreras 1991, Olarrea 1996, Ordoñez and Treviño 1999, Ticio 2004, Ortega-Santos 2004, and others, Spanish (SI and SII) subject nominals can trigger first or second person in T, when they refer to a group that includes the first or the second person:

- (54) Los estudiantes    asistimos                    a la clase    regularmente  
                                  asististeis  
      The students    attended-1P-PLU the class    regularly  
                                  attended-2P-PLU

We, the students, attended the class regularly.

You, the students, attended the class regularly.

The question is why SI does not allow this dissociation with *haber*. This is the same question regarding why *haber* in SI does not agree with the internal nominal but SII does.

The standard analysis for (54) is to assume that the overt nominal is left-dislocated and that there is a *pro* in [Spec, TP] which is responsible for the features in T (Contreras 1991, Olarrea 1996, among others):

- (55) [Los estudiantes [TP *pro*-1p asistimos                    a la clase regularmente ] ]  
      The students                                    attended-1P-PLU the class    regularly

We could try to apply this analysis to *haber*-sentences in SII, proposing an internal a *pro* with [1p] or [2p], which is responsible for the features of T, with the overt nominal right dislocated to some position:

- (56) [ [Habemos *pro*-1P ] dos estudiantes en la    clase]                    SII  
      Are-1P-PLU                                    two students    in the class

But if this is correct, we cannot explain (44–45): nominals specified for [person] are not allowed in *haber*-sentences. It seems, thus, that we don't have any element as a candidate to value the  $\phi$ -features of T in SII SEC.

I think we can solve all these questions at the same time, by proposing an interpretable [person] feature in T. I will discuss this in the next section.

### 3.2 Interpretable [person] in SII T and a repair strategy for SI T

I propose that in SII the effects just discussed are triggered by an interpretable [person] feature in T. This will solve all the questions.

First in SII, given that the [person] feature in T is interpretable, we don't need to value it (it already has a value). So only the [number] feature needs to probe small *v*, which is fine because small *v* has only [number], satisfying (48):

- (57) a. Match
- |              |   |               |
|--------------|---|---------------|
| T            |   | <i>v</i>      |
| [person: 1p] |   |               |
| [number: ]   | → | [number: plu] |
- b.  $\phi$ -valuation
- |               |   |               |
|---------------|---|---------------|
| T             |   | <i>v</i>      |
| [person: 1p]  |   |               |
| [number: PLU] | ← | [number: plu] |

Second, given that now the [person] feature is interpretable in SI, it can vary freely, resulting in [1p], [2p] or [3p], without agreeing with the internal nominal (as in (50)). This has the effect that we don't even need to resort to a *pro* to explain mismatches between the  $\phi$ -features of T and the overt subjects in all sentences in SII (like (54)).

Third, given that in SI T has uninterpretable [person] and [number], the small *v* won't be able to value the [person] feature (because small *v* is incomplete, as discussed). This is actually a welcome result for SI, since we want to produce a situation where T in this dialect receives a default value. We have a situation similar to (36), repeated here as (58), where T has no element to value its features:<sup>29</sup>

- (58) a. Llueve  
rains  
It rains
- b. [TP T- $\phi$  [VP Llueve]

But (58) clearly shows that SI (and also SII, but this is not applicable to *haber*-sentences for the reasons discussed) has a last resort strategy to repair this situation. As briefly pointed out when we discussed (36), there are three possible candidates for this strategy: default agreement, a subject clitic and an expletive. We will discuss each of them now.

#### 3.2.1 Default agreement

The idea of default agreement has been proposed by several authors to deal with situations like the one just discussed – for a sketch of a theory of default agreement in Chomsky's Agree system, see Béjar (2003: 76–80). A problem that always arises is how to restrict it. If default agreement were allowed to repair all instances of unvalued  $\phi$ -features we would predict no crashes in the Agree system (when it comes to  $\phi$ -

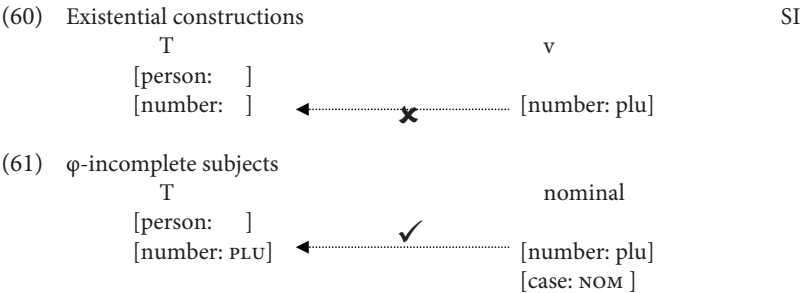
features) and, possibly, multiple instances of disagreement. However, the idea of default agreement is necessary in the system we are developing here. Minimally, we can define *default agreement* as the presence of a morphological feature in a head that cannot be explained by Agree.

Remember that the Condition on  $\phi$ -valuation (48) restricts  $\phi$ -valuation to instances where the Goal is complete with respect to the Probe. In addition, we are assuming that some nominals (precisely the ones that are allowed under *haber*) are also  $\phi$ -incomplete (they have only [number], no [person]). The combination of these assumptions predicts that these nominals are not allowed as subjects of any T in SI, because, by hypothesis, T is  $\phi$ -complete in SI but these nominals are not.<sup>30</sup> Notice that there is no problem with the [case]-feature of these nominals, which can be valued, under the Condition on Case-valuation (47). The problem is the  $\phi$ -valuation of T.

Notice further that we cannot assume that there is an unconstrained mechanism of default agreement that repairs this situation. This will predict a default value in T, which does not happen – these nominals, when possible, agree with T:

- (59) Llegaron dos policías  
Arrived two cops  
There arrived two cops.

On the other hand, we do have a similar situation with respect to existential constructions: a  $\phi$ -incomplete  $\nu$  cannot value the  $\phi$ -features of the  $\phi$ -complete T in these constructions in SI:



Remember that the Condition on Case-valuation (47) does not prevent the [case]-feature of the nominal from being valued. On the other hand, if we don't allow the nominal to value the [number] feature of T we will create a mismatch between Case and Agreement: the Goal will get a [case]-value, even if it is not able to value any  $\phi$ -feature of the Probe. We need to allow  $\phi$ -valuation in this case. I propose the following condition:<sup>31</sup>

- (62) If a Goal G receives a [case]-value from a Probe P, it must value all the uninterpretable  $\phi$ -features that the P is matching.

This allows the valuation of the [number]-feature in T, and leaves the [person]-feature unvalued. Then we could propose a mechanism of default agreement that may repair

heads that have incomplete valuation, in other words, if one feature needs to be valued, because of (62), the remaining unvalued features will receive default agreement – see Béjar and Rezac (2003: 54) for a similar claim.<sup>32</sup> In the case under consideration, this means that T will receive default [3p]. This is fine, because [1p] and [2p] nominals are always  $\varphi$ -complete, so default agreement will be unnecessary in those cases. Notice further that this does not affect our discussion about small  $\nu$  and the ban on [person]-nominals in *haber*-sentences; in this situation, the problem was Condition (47), that is, the [case]-value of these nominals. The Condition on  $\varphi$ -valuation (48) is satisfied there.

The situation of existential constructions, that is (60), cannot fall under Condition (62), since here the Condition of  $\varphi$ -valuation (48) applies, because there is no [case]-valuation involved. This means that small  $\nu$  cannot value the [number]-feature of T in (60), under (48), which corresponds to the situation in SI SEC (recall that the [person] feature of T in SI is uninterpretable). Therefore the mechanism of default agreement must be even richer than suggested, being able to repair heads that are totally unvalued, as long as they do not value the [case] of any goal. A general characterization could be that default agreement applies to  $\varphi$ -features that are not involved in [case]-valuation, if they fail to meet Condition (48).

As it is stated, (48) could be in conflict with (62). I will modify (48) in this way (where *uf*=uninterpretable features) – see Nomura 2005, Hiraiwa 2005 for related proposals:

(63) Condition on  $\varphi$ -valuation (modified)

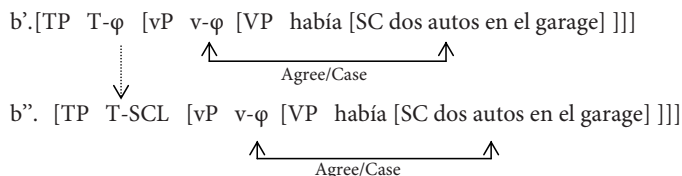
If a Goal G does not receive a [case]-value from a Probe P, G values P if and only if all *u*  $\varphi$ -f(P) match  $\varphi$ -f(G).

The modified version has an additional advantage: it makes (63) the caseless counterpart of (62), strengthening the correlation between Case and Agreement.

### 3.2.2 *Subject clitics*

In this section, I will consider one implementation of the default agreement mechanism, which is intended to be the sole mean of resolving situations where default agreement in T is called for (i.e. no other mechanism for giving default agreement to  $\varphi$ -features of T will be necessary under the analysis).<sup>33</sup> In particular, I will consider the possibility that a subject clitic values the  $\varphi$ -features of T in both (58) and *haber*-sentences in SI. This possibility would be the morphological instantiation of the default agreement mechanism. The morphological manifestation of this clitic is a [3p, SING] suffix, a solution that is in line with several analysis for subject agreement in null subjects languages – see Alexiadou and Anagnostopoulou 1998, Kato 1999, 2000, Ticio 2004, Díaz 2004, among others. Following this tradition I will call this CL a subject clitic (SCL), although it will be attached to a subjectless T. We can see the process here:

- (64) a. Había dos autos en el garage SI  
           was two cars in the parking lot  
           There were two cars in the parking lot.



In (64), the agreement takes place as explained before. What is different is that T receives a SCL with a specified value: [3p, sing] (let me call it *invariable* SCL), which surfaces as a verbal suffix. As a result, T values its  $\phi$ -features. In other words, since in SI T cannot value its  $\phi$ -features by probing  $\nu$  (i.e. probing  $\nu$  would not result in valuation of the  $\phi$ -features of T in SI given (63)), it does so by using the SCL, a morphological resource. If this is correct, the difference between SI and SII can be stated as the difference between the mechanisms to value the  $\phi$ -features of T. In SII Agree between T and  $\nu$  is possible, whereas SI must resort to a SCL, because Agree won't be able to value the  $\phi$ -features of T, given that small  $\nu$  is  $\phi$ -incomplete.<sup>34</sup>

Let me explain the distribution of the invariable SCL. We don't want this SCL to be freely attached to any verb in SI. This would predict that any sentence can have [3p, SING], which is contrary to the facts. On the other hand, we do have instances of invariant SCL in SII too, as showed by (58). Let me assume that SCL must appear only if T has no other way to value its  $\phi$ -features. To be more precise, a SCL must be used in SEC with *haber*-sentences, otherwise, the derivation will crash, for the reasons discussed. It is worth noticing that (58) allows a nominal in Spanish to trigger agreement with T, under certain circumstances in both dialects; in this case, the SCL is avoided, since T can establish a relation with the nominal, which gets NOM (no accusative cliticization is possible in this sentence):

- (65) a Llovieron insultos sobre el árbitro  
rained-PLU insults over the referee  
Lit: “Insults rained over the referee.”  
(to mean something like “The people insulted the referee a lot”)
- b. \* Los llovieron  
CL rained-PLU

In existential constructions, an additional  $\varphi$ -head is present (the small  $\nu$ ). Since, as discussed,  $\nu$  has valued its  $\varphi$ -features already, in SII, T (which has interpretable [person] but uninterpretable [number]) can probe  $\nu$ , valuing its uninterpretable [number]. However, SI requires the presence of SCL because here T also has an uninterpretable [person], which cannot be valued by small  $\nu$ , because small  $\nu$  has no [person], as discussed. If we further assume that this SCL is  $\varphi$ -complete, with a value of [3p, SING], we explain why the [number] feature of T is SING. As just mentioned,

if  $\varphi$ - $\nu$  can value the  $\varphi$ -features of T, no SCL will be necessary. This is precisely what happens in SII. Notice that this amounts to saying that the verbal suffixes in existential *haber*-sentences in SII are not the manifestation of some SCL, but the morphological counterpart of the  $\varphi$ -valuation. There is some evidence that this is indeed the case, which I will discuss in section 3.4.

We may push the SCL analysis tentatively by taking into consideration the claim made by several researchers (Alexiadou and Anagnostopoulou 1998, Kato 1999, 2000, Ticio 2004, among others), that Spanish also has SCLs that license null subjects in non existential sentences. If we add to this picture the Manzini and Savoia's 2002 suggestion that the inflection (that is, the SCL) is also able to receive the external  $\theta$  role, and that, therefore, there is no *pro*, we have an interesting parallelism between both forms of SCL.<sup>35</sup> The consequences of these suggestions are beyond the goals of this paper. It is important to keep in mind that my analysis does not depend on them. If the suggestions regarding SCL are ultimately proven wrong, that is, if we need a mechanism of default agreement different from SCLs, the system developed here will still work.

### 3.2.3 Null expletive/pleonasm

In this section we will discuss the possibility that a null expletive could be responsible for the default value of T in SI, in order to replace the mechanism of default agreement (what follows is then an alternative to the SCL analysis). Expletives have a long history of discussion in the generative grammar (see Svenonius 2002 and the papers and references there-in for an introduction). Since the scope of this paper will not allow me to do justice to the rich literature on this issue, I won't even attempt to present the main issues. The discussion will be limited to the possibility of using a null expletive as responsible for valuing T in SI.

Picallo 1998 – following ideas introduced by Alexiadou and Anagnostopoulou 1995, 1998 and Contreras 1996 – disregards the possibility of null expletives by proposing that it violates an economy condition, according to which an element can be in the numeration only if it has some effect on the output (Chomsky 1995:294). Given that a null expletive has no semantic nor phonological import, to introduce it will violate this requirement. Picallo applies this condition to both *there*-type and *it*-types expletives. She does not discuss the idea of quasi-argument *it* for verbs like *to rain* (Chomsky 1981:323–325), but she does discuss cases of *it*-extraposition (*It is true that John is tall*) in Catalan. Obviously, if a quasi-argument has a semantic import, it can enter the numeration without violating the economy condition. This will mean that verbs like *llover* (to rain) could have a null expression in the subject, which I will call *pleonasm* (as in Travis 1984:216–267) as opposed to *expletive* (this last term will be used for non-quasiarguments). It also has been proposed that *it*-extraposition constructions have a quasi-argument *it* (see Svenonius 2002:6–7 and the references there-in). If this is correct, Picallo's argument may only be applied to *haber*-sentences.

However, Torrego 1984, who is working in SI, has suggested that *haber*-sentences

could have a null quasi argument (that is, a null pleonasm in the terminology I am using here). For Chomsky 1981, the possibility of controlling this position (by another quasi argument) is evidence of its status as quasi argument:

- (66) It sometimes rains after snowing.  
[Chomsky 1981:323]

In other words, a pleonastic PRO can be controlled by a pleonastic *it*. Torrego applies this test to show that *haber*-sentences have a null quasi-argument:

- (67) a. A veces hay mosquitos en el jardín después de llover  
Sometimes be gnats in the garden after raining  
There sometimes are gnats in the garden after raining.  
b. \*A veces encendemos una hoguera después de llover  
Sometimes light a bonfire after raining  
We sometimes light a bonfire after raining.  
[Torrego 1984:335]

According to Torrego, this contrast shows that there is a quasi-argument with *haber*. This is not so clear, however, and Torrego does not explain her idea in detail. We could say that the pleonastic PRO in (67a) is controlled by the null pleonasm in the higher *hay*-clause. But how does it explain that (67b) is ungrammatical? We could answer this question by suggesting that a pleonastic PRO (a quasi-argument) must be controlled by another quasi-argument; in fact there seems to be additional evidence to this effect (but see the end of the discussion):<sup>36</sup>

- (68) a. \* Llover es peligroso  
To rain is dangerous  
b. \* Haber un policía en el jardín es peligroso  
To be a cop in the garden is dangerous  
c. Cazar es peligroso  
To hunt is dangerous

In (68a-b) there is no controller for the pleonastic PRO. (68c) shows a case of a non pleonastic PRO, so it does not need to be controlled.<sup>37</sup>

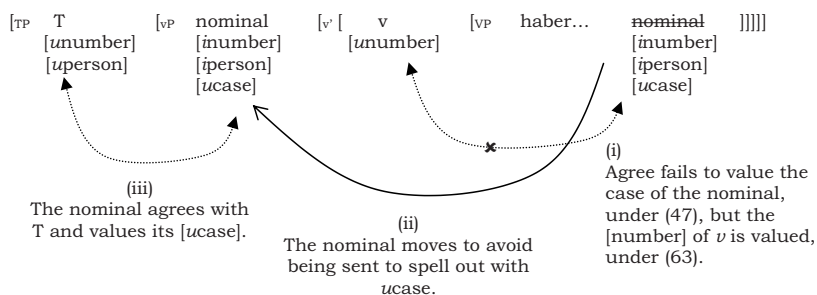
Thus, if *haber* does have a null quasi-argument, we could use it to value the  $\phi$ -features of T. Assuming that it is  $\phi$ -complete, it could intervene between T and small *v*, provoking [3p sing]. It could be that it is in [Spec, *v*P] – Radford (1997:400), Nomura 2003, among others, make this suggestion for *there*-type expletives – or it could be adjoined to T, as Chomsky 2001b suggests for overt French pleonasm *il*.

Notice that we don't need to necessarily conclude this. If we grant invariable SCL the ability to control a pleonastic PRO – this will imply that SCL can be the quasi argument of *haber*-sentences, naturally extending similar suggestions by Manzini and Savoia 2002 regarding *pro* – we don't need to propose a pleonasm in [Spec, *v*P]. In fact, the Control facts provided by Torrego 1984 in SI also hold for SII. Since there

we already have a candidate for the controller (the interpretable [person] in T), we don't need a pleonasm either. Obviously, these are not arguments against the idea of a pleonasm in [Spec,  $\nu$ P], but they do suggest that SCL can do the same job. To the extent that this is correct, up to this moment, we don't have a way to teasing apart an explanation based on SCL from another based on null pleonasms in [Spec,  $\nu$ P] – this would mean that they are just terminological variants.<sup>38</sup>

There could be a way, though. If there is a null pleonasm in [Spec,  $\nu$ P], this will mean that  $\nu$ P is a full transitive clause. However, it behaves differently in several ways. Although some of these differences could be accounted for by resorting to independent reasons,<sup>39</sup> there is at least one that cannot. If  $\nu$ P is a full transitive clause, it should be a strong phase,<sup>40</sup> in particular, it should allow additional specifiers. In the system that we are developing here, this is a problem because, under Bošković 2005 version of the Phase Interpretability Condition, a nominal cannot be trapped inside a Spell Out domain without checking its [case] feature, otherwise it cannot check it anymore, then, if in a given domain, the nominal is not able to value its Case, it must move – this enforces successive cyclic A-movement. Given that we are assuming that small  $\nu$  is incomplete, that is, that it has only [number] and no [person], it cannot value the [case] feature of a complete nominal, as discussed. Therefore, in Bošković's system, this nominal should be able to move further to check Case with a higher head, for instance T:

(69)



This wrongly predicts that  $\phi$ -complete nominals could be allowed in SEC, and that they could agree with T in both dialects, which is contrary to the facts, as discussed. On the other hand, if there is no [Spec,  $\nu$ P], this could mean that this small  $\nu$  cannot have additional specifiers (it is not a strong phase, in the sense of Chomsky 2001a). Thus, an  $\phi$ -complete nominal cannot undergo further movement, and it won't be able to value its [case] feature, resulting in an ungrammatical sentence.<sup>41</sup>

Given this possibility, it is crucial, then, that [Spec,  $\nu$ P] is empty. If the small  $\nu$  in *haber*-sentences does not have a specifier, we predict that (69) is not possible. Thus, if it is true that *haber*-sentences have a quasi-argument, this should be realized using means different from a null pleonasm. The SII interpretable [person] in T and the SI SCL are very good candidates to achieve this task. If this is correct, the small  $\nu$  with



*haber*-sentences should not have an external position.

In addition, it is not clear that there is convincing evidence in favor of the quasi-argument in these sentences. First, there are grammatical instances of these verbs where there is no trace of a possible controller for the pleonastic PRO:

- (70) a. De llover, regresaremos a casa  
 Of raining, we will come back home  
 If it rains, we will come back home.
- b. De haber un policía en el jardín, regresaremos a casa  
 Of being a cop in the garden, we will come back home  
 If there is a cop in the garden, we will come back home.

In this case, it seems that preposition is licensing the infinitival – putting aside how it is able to do that. It is tempting to see this data as showing that this PRO needs Case; however this will leave (67b) unexplained, since there is a preposition in this construction too.

Second, unaccusative constructions also license quasi-argumental PRO:

- (71) A veces llegan mosquitos al jardín después de llover  
 Sometimes arrive gnats to-the garden after raining  
 There sometimes arrive gnats to the garden after raining.

It is difficult to say that unaccusative constructions have a quasi-argument.

This casts doubt on the idea that a pleonastic PRO must be controlled. Actually, it suggests exactly the opposite, and represents conflicting evidence with respect to (66), which also has a counterpart in Spanish. Pushing the idea that a pleonastic PRO cannot be controlled, (67b) could be bad because there is somehow an illegal control from the matrix subject; (67a) would be good because there is no controller, since *haber*-sentences would have no subject, that is, no quasi-argument. Of course, we need an alternative explanation for the contrast in (68). If there is no quasi-argument in (68b), the PRO in this construction will be an expletive, then, its ungrammaticality will be explained by the general ban on expletive PRO. (68a), however, cannot be treated in the same way, but now we could suggest that a pleonastic PRO needs (non null) Case, since we have a different reason to explain the ungrammaticality of (67b). In other words, it is possible that we have a quasi-argument with *llover* (to rain) and other similar constructions, but not with *haber*-sentences.

Since the evidence is contradictory, we have no actual conclusion from these data. We need to investigate in more detail the nature of control in these structures to come up with a final conclusion. We don't have the space to do this here, so our findings in this point will be provisional. However, even if we do have a quasi-argument with *haber*-sentences in Spanish, this does not necessarily imply that we must have a null pleonasm, since other mechanism can take care of this requirement (for instance a SCL in SI or an interpretable [person] in SII). For these reasons, let me put aside the possibility of a null pleonasm in SEC. This still leaves the possibility of a null exple-

tive (non-quasi-argumental). For SII there is no reason to have an expletive, since all conditions have been satisfied.<sup>42</sup>

For SI, a way to use an expletive to value the  $\phi$ -features of T is to base-generate it in [Spec,  $\nu$ P] and give it a [case]-feature to check but with only [person] features (so,  $\phi$ -incomplete, without [number]). This will trigger the same process that we discussed for a null pleonasm (see note 38), causing a default agreement situation under Condition (62). There are three problems with this analysis. First, since it needs to value the [person] feature of T, the expletive must have an interpretable [person] feature, which is completely inappropriate for an expletive.<sup>43</sup> Second, it violates the economy condition discussed at the beginning of this subsection, as Picallo 1998 explains. Third, it does not represent any advantages over the default agreement mechanism, which is still needed. Therefore, we disregard the possibility of having an expletive in these constructions too.<sup>44</sup>

### 3.3 Intermediate conclusions

So far, we have seen that, for SII, Agree is enough to explain the situation in SEC. Provided that small  $\nu$  has only uninterpretable [number] and that T has interpretable [person] in addition to uninterpretable [number], T can probe small  $\nu$ , valuing its [number] feature (the only one that needs to be valued here). With this mechanism, I have explained the ban on [person] nominals, the agreement with the verb, and the ACC Case. There is no need for default agreement, subject clitics or expletives/pleonasm in SII SEC. Moreover, if a quasi-argument would ultimately be necessary for independent reasons, this function could be performed by the [person] feature in T, rendering a null pleonasm unnecessary.

I have proposed that in SI T has a complete set of uninterpretable  $\phi$ -features, which is the only difference with respect to SII. Given this, under Condition (63), the  $\phi$ -features of T cannot be valued by probing small  $\nu$  (although everything else remains the same); accordingly, T does not agree with the nominal in SI, but always surfaces with [3p, SING]. Since Agree is not responsible for this value, an additional mechanism is necessary.

On one hand, we have seen that, when a  $\phi$ -feature is not involved in the [case]-valuation of a goal and, in addition, Condition (63) is not met, the  $\phi$ -feature must get a default value. This makes default agreement a plausible mechanism to explain the situation in SI SEC, with no need for SCL or expletive/pleonasm. On the other hand, it is possible that *haber*-sentences could have a quasi-argument, which could also give us a [3p, SING] value under Agree; the evidence in favor of this is not conclusive, however.

If we admit the existence of a quasi-argument in SEC, a mechanism of default agreement will not be able to satisfy this requirement, because the system needs an additional element in narrow Syntax to function as the quasi-argument. If we use a pleonasm in [Spec,  $\nu$ P], a wrong prediction arises: this will mean that  $\nu$ P has a speci-

fier, that is the possibility of an escape-hatch to allow  $\varphi$ -complete nominals to move in order to enter into an Agree relation with a higher head, just as in other transitive constructions – see Section 5 for more discussion on this with respect of Differential Object Marking. Hence, we disregard this possibility. This leaves the complete SCL as the only possibility to carry on the quasi-argument in SI SEC. As mentioned, this hinges on the possibility of a quasi-argument, thus, if this is ultimately proved to be wrong, a SCL will be only a morphological mechanism to instantiate default agreement. In SII the system has an element to perform as quasi-argument, namely, the interpretable [person] in T, thus nothing changes there.

A final question I want to address here is what happens with T in non existential constructions in SII. There are two possibilities. It has a [person] feature that is interpretable (as in SEC) or not. Suppose that it has not, that is, that T in SII non existential constructions has both uninterpretable [person] and [number]. The first question to address is why we cannot use this T, which has complete uninterpretable  $\varphi$ -features, in SEC too. If we could, we would predict that the agreement in SEC is optional in SII. The T with all uninterpretable  $\varphi$ -features will give us a default value (as in SI), and the T with interpretable [person] will give us agreement with the nominal. But we have already seen that this is unlikely (see note 19). If we say that the T with two uninterpretable features is banned from SII SEC because there will be no way to value its [person] feature (given that  $v$  has no [person]), under the assumption that there is no default agreement, SCL or pleonasm/expletive in SII, we will face the problem that one of these mechanisms must be present in SII too (to explain (58)). I conclude, then, that SII has a unique T with an interpretable [person] and an uninterpretable [number].<sup>45</sup>

There is a potential problem with this conclusion. Given that in non SEC there is a subject and there is no restriction regarding the [person] value of the subject, we can ask how the [case] feature of the subject is valued, since in SII, T seems to be incomplete (an then, presumably, unable to value the [case] feature of its subject). However, it is not true that T in SII is “incomplete;” it has its full set of  $\varphi$ -features; it just happens that one of them is interpretable. Therefore, it will be able to match all the relevant features of the goal, valuing its case.<sup>46</sup> This is different from small  $v$ , which is truly incomplete, even with respect to a potential goal with full  $\varphi$ -features, since it lacks [person]. This allows me to retain the conclusion that there is a unique T for all sentences in SII.

### 3.4 The tendency of *haber* to regularize in SII

I will suggest in this subsection that the process of valuing the  $\varphi$ -features of T with an invariable SCL or with default agreement (in SI) may leave a morphological form different than the one that results from valuing by Agree (in SII). Remember that in Spanish (both dialects) it is possible to have a mismatch between the overt subject and the features in T:

(73) Hemos dos estudiantes en la clase III  
 Habéis  
 Are-1P-PLU two students in the class  
 Are-2P-PLU  
*Lit:* We there are two students in the class.

In (72), the presence of personal SCLs could explain the apparent disagreement; in fact, dialects that do not have these SCLs – as Puerto Rican Spanish – do not show this phenomenon (see Ticio 2004 for an analysis in this direction). We already discussed what happens in (72). The overt subject is a topicalized element adjoined to TP.<sup>47</sup> The morphological merging of a [1P, PLU] SCL with *haber* renders the irregular form *hemos*.

As already discussed, in (73), which is possible only in SII, the operation Agree values the  $\phi$ -features of T. T can get valued only by probing *v*. An invariable SCL (or default agreement) is not necessary in SII SEC. Since this time no relevant morphological operation will occur (because there is no SCL or default agreement), but just the pure morphological interpretation of T's  $\phi$ -values set by Agree, *haber* surfaces in its regular form.<sup>48</sup> This explanation, however, is not totally conclusive, because the regularization does not affect the whole paradigm.

Contrary to what happens in the present tense discussed in (73), in the preterite tense, SII haber-sentences do not regularize the verb:<sup>49</sup>

- (74) Hubimos        dos estudiantes en la clase  
Hubieron  
Were-1p-PLU two students    in the class  
Were-3p-PLU

It is worth noticing, however, that some dialects of SII – remember that SI and SII are just shorthands for different families of dialects – show another case of regularization. In the two dialects the present form of *haber* (*hay*) does not show agreement morphology.<sup>50</sup> Fernández-Soriano (1999: 133) suggests that this is because the morpheme *-y* (a remnant from an old locative clitic) blocks the presence of agreeing morphemes. This locative clitic can be found in French (*y*) and Catalan (*hi*), and it could be related to Italian expletive *ci* (Fernández-Soriano 1999: 133). In these languages, the clitic is productive, but *hay* is the only form that has this element in Spanish. That means that this is a morphological fossil, with no role in the construction, except blocking the morphological presence of the agreement. The exceptional form *hay* has these morphological components (roughly speaking):

- (75)    a. SINGULAR *hay*  
              ha -PRESENT-3PERSON-SINGULAR -MORPHOLOGICAL FOSSIL  
              ha Ø y  
         b. PLURAL *hay*  
              ha -PRESENT-3PERSON-PLURAL -MORPHOLOGICAL FOSSIL  
              ha Ø y

Note that the normal forms for third person present with *haber* are (see also note 50):

- (76) a. SINGULAR *ha*  
           *ha* -PRESENT-3PERSON-SINGULAR  
           *ha* Ø  
       b. PLURAL *han*  
           *ha* -PRESENT-3PERSON-PLURAL  
           *ha* n

Notice, however, that strictly speaking, these are not regular forms (but they are normal in the sense that they do not receive -y), since true regular forms should be formed by using an unmodified root (in this case *hab-*) and the present suffix; since the [1p] present suffix is a zero morpheme, a true regular form should surface as *habe*, with the theme vowel -e, following the model of *comer* (“to eat”), *come* (“I eat”), which is a true regular verb.

However, in some dialects of SII, the exceptional form *hay* [áj] becomes *haen* [áen] or *hayn* [ájan], that is, it allows the plural *-n* to be suffixed to the verb, unblocking the effect of *-y*, as reported by Kany (1951:257) for rural Argentinean, Lapesa (1980: § 133) for Substandard Venezuelan, Montes (1982:384) for Colombian Antioqueño – see also Fernández-Soriano and Táboas-Baylin (1999:1758). As in the case of *hemos*

> *habemos*, I want to suggest that this process of normalization is triggered by the fact that T is valuing its  $\phi$ -features by probing  $v$ , without intervention of any SCL or default agreement process in. If this line of reasoning is correct, it suggests that T indeed probes  $v$  in SII, and that an invariable SCL is responsible for the lack of agreement in SI. However, as mentioned, this regularization does not affect the whole paradigm, then, this conclusion should be taken with some reservation.

### 3.5 Temporal existential constructions

In this subsection I will present data from the so called “temporal existential constructions” (TEC) (Rigau 2001) which seem to have a behavior to similar SEC, but also present some interesting differences. Some verbs that indicate elapsed time can also combine with a nominal, in particular, *hacer* (lit. “to make”) and *ir (para)* (lit. “to go (for)”).<sup>51</sup>

- (77) Hace un mes que Juan murió  
 makes a month that John died  
 It makes a month since John died.
- (78) Va (para) un mes que Juan murió  
 Goes (for) a month that John died  
 Two months have gone since John died.

As expected, in SI no agreement surfaces between the nominal and the verb, which is an indication that the impersonal SCL is present here also. In some dialects of SII (in particular in some SII substandard varieties), the agreement is possible:<sup>52</sup>

- (79) Hacen dos meses que Juan murió SII (substandard)  
 make two months that John died  
 It makes two months since John died.
- (80) Van (para) dos meses que Juan murió SII  
 Go (for) two months that John died  
 Two months have gone since John died.

There are, however, two types of temporal-existential verbs, as reported by Fernández-Soriano and Táboas-Baylin (1999: 1748–1751), among others. The first one – TEC1, exemplified in (77)–(80) – takes a nominal that expresses time with a proposition that expresses an event.<sup>53</sup> The second one (TEC2) is a sort of temporal adjunct that behaves like a preposition:

- (81) Juan vino hace dos años  
 John came makes two years  
 John came two years ago.

Only TEC1 can trigger agreement in some dialects of SII. TEC2 never triggers agreement in any dialect:

- (82) \* Llegó hacen dos horas *SI and SII*  
 came make-PLU two hours  
 He came two hours ago.  
 [Fernández-Soriano and Táboas-Baylin 1999: 1750]

Only TEC1 allows cliticization of the object (at least for SI):

- (83) a. Hace veinte años que nos casamos *SI*  
 makes twenty years that we married  
 It has been twenty years since we married.  
 b. Los hace  
 CL-ACC makes  
 [Fernández-Soriano and Táboas-Baylin 1999: 1750]

This is not possible with TEC2:

- (84) a. Nos vimos hace un mes  
 Us saw makes a month  
 We saw each other one month ago.  
 b. \* Nos vimos lo hace  
 Us saw CL-ACC makes

Fernández-Soriano and Táboas-Baylin (1999: 1750) interpret this contrast as evidence that in TEC2 the form *hace* is no longer a verb, but maybe a preposition (see also Rigau 2001: 318). However, this is not so clear, since it allows some inflection, for instance, simple future tense morphology:<sup>54</sup>

- (85) Nos vimos hará un mes  
 Us saw make-FUT a month  
 We saw each other probably one month ago.

This inflection is, however, severely limited in TEC2. No past or perfect tense is possible:

- (86) a. \* Nos vimos habrá hecho un mes  
 Us saw have-FUT made(PARTICIPLE) a month  
 We saw each other probably one month ago.  
 b. \* Nos vimos hizo un mes  
 Us saw made a month  
 We saw each other one month ago.

These possibilities are available for TCE1.

- (87) a. El lunes habrá hecho un mes que Juan murió  
 The Monday have-FUT made a month that John died  
 On next Monday, it will be a month since John died.

- b. El lunes hizo un mes que Juan murió  
 The Monday made a month that John died  
 On past Monday, it was a month since John died.

Let's accept the suggestion that *hace* in TEC2 is a preposition. Putting aside the issue of how a verb is transformed into a preposition, the presence of inflectional morphology in TEC2, although limited, could be interpreted as the presence of valued features in the forms *hace* or *hará*, that is, there is no uninterpretable  $\phi$ -features, and the forms are not able to check structural Case. This could be a problem for its internal nominal, since there will be no  $\phi$ -head to value its [case] feature. However, the nominal is an argument of *hace*, and it receives a thematic interpretation from it (temporal, we could say). So it meets the requirement for inherent Case assignment. Let's assume that this is what happens in TEC2.

On the other hand, TEC1 behaves like *haber*-sentences, except for the restrictions on its nominal (it must be a nominal compatible with the thematic interpretation that the verb assigns). It allows cliticization of its object, and agrees with it, in some dialects of SII. Then, I propose that there is also a small *v* in this kind of TEC, and that in the relevant dialects, T also probes *v*. Given that the same mechanism can apply here, this reinforces that idea that a small *v* with  $\phi$ -features, which is probed by T, is responsible for Case and agreement in *haber*-sentences. In addition, for SI dialects which do not allow agreement in TEC, we can also adopt the proposal that there is an SCL or a process of default agreement, as explained.

An interesting question arises here with respect to the SII dialects that do not allow agreement in TEC 1 of the first type (these are in fact the Standard SII dialects). The question is why, if the probing of *v* by T is available in SII, these dialects do not make use of it in TEC 1.

We must take into consideration the fact that SCL/default agreement is also available in SII. The presence or absence of impersonal SCL could depend on an idiosyncratic option, according to the verb. In fact, there is some evidence that this is indeed the case. For instance, in Standard Peruvian Spanish (which is typically SII), there are two different TEC verbs that behave differently with respect to agreement. The verb *hacer* (lit. "to make") does not allow agreement in this dialect, but the verb *ir* (lit. "to go") does:

- (88) \* Hacen dos años que Juan murió      *Standard Peruvian Spanish*  
 make-PLU two years that John died  
 It makes two years that John died.
- (89) Van ya dos años que Juan murió      *Standard Peruvian Spanish*  
 go-PLU already two years that John died  
 Two years have gone by since John died.

The question is what could be this idiosyncratic characteristic of the verb that prevents the agreement here. We can make use of the inherent Case property of TEC2. The thematic situation is the same in TEC1, and inherent Case is indeed an idiosyncratic



property. So, for some dialects of SII, the TEC1 verb *hacer* assigns inherent Case to its internal argument. Under the assumption that inherent Case deactivates the  $\phi$ -features of the nominal (Chomsky 2000: fn 88, Stepanov 2002), T cannot value its  $\phi$ -features using Agree, thus an SCL or a mechanism of default agreement must be used, as in SI *haber*-sentences. Other verbs of the same dialect (for instance (89)) do not have inherent Case to assign, so they allow agreement.

An interesting situation arises here. Given that the form *hace* in some SII dialects can assign inherent Case, and given that nominals with inherent Case cannot feed Agree, we predict that small *v* is not possible there, since it won't be able to value its  $\phi$ -feature. Under the assumption that ACC clitics are possible only under Agree with small *v*,<sup>55</sup> no clitics should be allowed for these constructions. The initial data seems to confirm this prediction. SII Speakers that cannot accept agreement in *hace*-sentences also have resistance to accept the clitic:

- (90) a. Hace dos horas que espero *Some SII dialects*  
 Makes two hours that I wait  
 It has been two hours since I'm waiting.
- b. ?? Las hace  
 CL-fem-plu makes

The same speakers accept the clitic and agreement with other TEC1 verbs:

- (91) a. Van dos horas que espero *Some SII dialects*  
 Go two hours that I wait  
 It has been two hours since I'm waiting.
- b. Las van  
 CL-fem-plu makes

The situation is not so clear, however. The judgments are not as steady as we would expect. But there are intervening factors. First, the sequence *Las hace* is actually ambiguous; it can also mean "S/he makes them", and under this reading it is a perfectly normal sentence – notice that no ambiguity arises in *haber*-sentences or with other cases like (91). In addition, the agreeing *hace* is identified as substandard, that is, it is heavily stigmatized; so it is not implausible to suggest that the speakers are trying to suppress the agreement, but fail to suppress the clitic.

A more rigorous collection of data is needed before we can draw firm conclusions regarding *hace*-sentences, in order to properly classify the speakers of relevant dialects and identify the intervening factors. I will leave this for future research. However, the discussion of TEC shows a possible scenario where we can observe two mechanisms to value the  $\phi$ -features of T, as in *haber*-sentences: (i) by probing *v*, and (ii) by default agreement or the insertion of a SCL. Given the idiosyncratic differences among TEC verbs with respect to the possibility of inherent Case assignment, it is possible that, even inside SII, sometimes the agreement gets suppressed together with the cliticiza-

tion. In fact, it has been reported that the same happens in some dialects with at least a subset of *haber*-sentences. We will discuss this in the next subsection.

### 3.6 More dialectal differences

Treviño 2003 reports a dialect that, at least for a subset of *haber*-sentences (the locative ones, that is, the ones that can be paraphrased by *estar*), does not allow either agreement or cliticization of the internal nominal.<sup>56</sup> According to Treviño 2003, in Spanish, there are three types of *haber*-sentences: locational (paraphrased by *estar* “to be (locative)”), unbounded (paraphrased by *existir* “to exist”) and contingent (paraphrased by *tener* “to have (possessive)”):<sup>57</sup>

- (92) Hay una víbora detrás del sofá *locational*  
 Is a snake behind the sofa  
 There is a snake behind the sofa.  
 PARAPHRASE: Detrás del sofá está/\*existe/\*tiene una víbora  
 Behind the sofa is/\*exist/\*has a snake
- (93) Hay tréboles de cuatro hojas *unbounded*  
 Be-PLU clovers of four leafs  
 There are clovers of four leafs.  
 PARAPHRASE: Existen/\*están/\*tienen tréboles de cuatro hojas  
 Exist/\*is/\*has clovers of four leafs
- (94) Hay monarquía en Suecia *contingent*  
 Is monarchy in Sweden  
 There is a monarchy in Sweden.  
 PARAPHRASE: Suecia tiene/\*existe/\*está monarquía  
 Sweden has/\*exist/\*is monarchy  
 [Treviño 2003: 179–180]

In all SII dialects, included the one reported by Treviño (let me call it SII-T), unbounded and contingent *haber*-sentences can replace its object with an ACC clitic and they show agreement, as discussed. In SII-T, however, a locational *haber*-sentence “bars or strongly disfavors verb-agreement and object-clitics” (Treviño 2003: 180).

This is a behavior that resembles the one we just saw with TEC1 in some dialects. If this is correct, the existence of SII-T represents evidence in favor of the system I’m developing here. That is, we can suggest that inherent Case is involved here too (actually Treviño suggests Partitive Case as a possible explanation). We will address this later; first let me raise a note of caution.

Treviño claims to “have gathered a considerable body of data” (2003: 178), but she warns us that in general the agreement facts in her data “are quite complex and not as steady in their behavior, as far as native speakers’ performance and judgments are concerned” (2003: 184),<sup>58</sup> but she nevertheless thinks that, with respect to locational

*haber*-sentences, “agreement on the verb is felt alien” (2003:184) by the speakers of SII-T.

With respect to the clitic, it could be the case that some interfering factors are conspiring to obtain the same result. For instance, in both SI and SII, the cliticization of bare nominals renders some differences in the judgments:

- (95) a. ¿Quieres helado?  
Want ice cream  
Do you want ice cream?
- b. % Lo quiero  
CL want  
I want it
- c. (Sí) quiero  
yes want  
Yes, I want

The same is true for existential constructions:<sup>59</sup>

- (96) a. Hay helado?  
is ice cream-MAS  
Is there ice cream?
- b. % Lo hay  
CL is
- c. (Sí) hay  
yes is  
Yes, there is

Given that we are dealing here with a general property of Direct Objects for all verbs (and not only for existential constructions), in this case it is difficult to assume that there is no small  $\nu$  if the clitic is not licensed (in other words, we do have structural Case here). A better alternative will be that the clitic needs something additional to be properly licensed; it could be a high degree of specificity, as has been proposed in the literature (for instance, see Suárez 1988), or topicality (Leonetti 2003). In any case, there may be abstract agreement between  $\nu$  and the object, even when the latter is a bare noun. In fact, the object in *haber*-sentences cannot be doubled by a clitic:

- (97) a. Hay un niño en el parque  
Is a kid in the park  
There is a kid in the park
- b. \* Lo hay un niño en el parque  
CL was a kid in the park  
There were some kids in the park.

This is compatible with the fact that that doubling structures usually need higher

specificity and that objects in *haber*-sentences have a low degree of specificity. This is relevant because several of Treviño's examples are with bare objects. However, she also shows examples of contingent and unbounded *haber*-sentences with bare nominals that do allow cliticization, which represents a contrast with locational *haber*-sentences. Then, there is no reason to doubt the existence of SII-T.

In addition, there is another difference with respect to cliticization between locational *haber*-sentences and other types, which is not directly addressed by Treviño 2003. More importantly, this seems to be true of SI and SII. Locational existential sentences do not allow cliticization of the nominal alone, that is, they cannot cliticize only the object, stranding the locative phrase – as observed by Díaz (2004: 36):

- (98) a. Hay una niña en el parque *locational*  
           Is a kid-FEM in the park  
           There is a kid in the park.
- b. ?? La hay en el parque  
           CL-FEM was in the park  
           There were some kids in the park.
- c. La hay  
           CL-FEM is

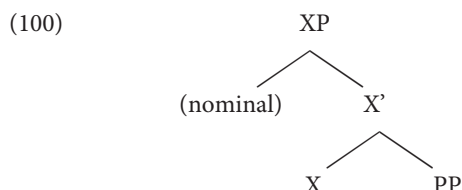
This is not the case for other *haber*-sentences:<sup>60</sup>

- (99) a. Hay monarquía en Suecia *contingent*  
           Is monarchy-FEM in Sweden  
           There is monarchy in Sweden.
- b. La hay en Suecia  
           CL-FEM is in Sweden  
           [Treviño 2003: 180]

At first sight, this is unexpected in our current framework. Why should there be a difference with respect to cliticization? What is the source for the contrast between (98b) and (99b)? However, this could turn out to be evidence for the presence of small *v* in these constructions. The questions we haven't addressed yet are deeper and more important: Why is there a small *v* in existential constructions? What is the source for its presence? We will deal with these questions in Section 4.

Now let me address the question regarding how the idea of inherent Case assignment could help us here, as previously suggested. The only problematic case is locational *haber*-sentences. Here, the agreement disappears together with cliticization. The others cases are normal instances of SII SEC.

At first glance, the inherent Case assignment is problematic because there is no obvious thematic relation between *haber* and its internal nominal. In fact, the internal nominal seems to be in a thematic relation with the preposition. It is standardly assumed that existential constructions include a Small Clause SC (Stowell 1981, 1983, Safir 1985). Let's accept Stowell 1983's idea that SC is an XP with the nominal in its



Notice that the nominal is the external argument of the PP, and then, it will receive a  $\theta$ -role (the *locatum* as opposed to the *location*, which will be the internal argument of PP). If we assume that X is involved in the assignment of the external  $\theta$  role – naturally extending standard assumptions regarding  $\nu$ P – we have a potential inherent Case assigner.<sup>61</sup>

Since inherent Case is a lexical property, it could be an idiosyncratic property of X in SII-T – it does not need to be a general property of X in all of Spanish. Once the corresponding nominal has inherent Case, it will be frozen for Agree, as discussed above. This means that it cannot value  $\phi$ -features of any head, T or *v*. Then, neither agreement nor clitics will be possible.

Given that inherent Case blocks Agree, one could ask if in all instances of SI *haber*-sentences (with a default value) we have inherent Case. However, we cannot use the idea that inherent Case blocks Agree to explain the differences between SI and SII with respect to agreement discussed above. If a nominal receives inherent Case, we predict default values in T and no clitics, but although T in SI existential constructions has a default value, such constructions do allow clitics, as discussed.

### 3.7 A prediction with respect to raising verbs

Another prediction is made, given the idea that T probes small  $v$ . If a defective T (in Chomsky's 2000 sense) is on top of the small  $v$  in *haber*-sentences, the  $\varnothing$ -features of a higher non-defective T could be valued by  $v$  in SII but not in SI. This prediction is borne out. The nominal agrees with the finite verb in SII (this sentence is ungrammatical in SI):

- (101) Parecen haber dos hombres en el jardín SII  
 seem-PLU to be two men in the garden  
 There seem to be two men in the garden.

On the other hand, in SI, T is not valued by Agree, as discussed, and then it receives [3p, SING]:

- (102) Parece haber dos hombres en el jardín SI  
 seems-SING to be two men in the garden  
 There seem to be two men in the garden.

This is illustrated here (using a SCL for SI):<sup>62</sup>

- (103) SII  
 [ T- $\varphi$  *Parecen* [TP T-def [vP v- $\varphi$  [VP *haber dos hombres en el jardín* ]]]]
- 

- (104) SI  
 [ T-SCL *Parece* [TP T-def [vP v- $\varphi$  [VP *haber dos hombres en el jardín* ]]]]
- 

This contrast between the two dialects – noticed by Suñer (1982a:101) but left unexplained<sup>63</sup> – is straightforwardly accounted for under the assumption that T can probe small *v*. Notice in addition that, as in matrix *haber*-sentences, agreement is maintained with clitics in SII; on the other hand, SI also allows ACC clitic, but no agreement surfaces, as predicted:<sup>64</sup>

- (105) Parecen haber-los SII  
 seem-PLU to be-CL-ACC-PLU
- (106) Parece haber-los SI  
 seem-SING to be-CL-ACC-PLU

Before turning to some explorations regarding the reasons why we have small *v* in *haber*-sentences, let me briefly comment on a hypothesis that has been proposed with respect to Case in SEC. Demonte 1990: 165–167, Treviño 2003, Rigau 1994 (for Catalan), among others, have suggested that the nominal in SEC receives Partitive Case from the verb, following ideas presented by Belletti 1988, and Lasnik 1992, 1995, 1999.<sup>65</sup> My proposal can be seen as a way to implement the Partitive Case Hypothesis inside the Agree system, although with different technical details, since my analysis assumes that the nominal checks Case in a lower position, without relation with T (in contrast to Chomsky's analysis of existential constructions).

#### 4. A possible source for small *v* in existential constructions

Existential constructions in Spanish are not the only type of sentences that exhibit ACC in an unexpected place. In fact, verbs that include a Small Clause (SC) reveal the presence of ACC (as can be inferred from the cliticization).

- (107) a. Juan es un buen abogado  
 Johnis a good lawyer

- b. Juan lo es  
JohnCL-ACC is
- (108) a. Juan está muy ocupado  
Johnis very busy
- b. Juan lo está  
JohnCL-ACC is

There is, however, a very important difference between this cliticization and the one we are discussing regarding ACC objects. The clitic does not “replace” the nominal in (108–109). I will assume a structure with an internal SC for these sentences. Then, the nominal starts in the SC and raises to [Spec, TP]:<sup>66</sup>

- (109) a. [TP [VP [SC [nominal] [predicate] ] ] ]  
b. [TP [nominal]<sub>i</sub> [VP [SC t<sub>i</sub> [predicate] ] ] ]

Given this, it seems reasonable to assume that the predicate has been “replaced” in these cases. This is confirmed by the fact that no agreement arises in these contexts: the ACC clitic appears always in the invariant form *lo*, which I assume is  $\varphi$ -less. Forms with  $\varphi$ -features are ungrammatical, which indicates that there is no agreement with the nominal:<sup>67</sup>

- (110) a. María es una buena abogada  
Mary is a good lawyer-FEM
- b. María lo es  
Mary CL-ACC is
- c. \*María la es  
Mary CL-FEM-ACC is
- (111) a. María está muy ocupada  
Mary is very busy-FEM
- b. María lo está  
Mary CL-ACC is
- c. \*María la está  
Mary CL-FEM-ACC is

However, not all predicates allow replacement by the clitic. Typically, in locative sentences, cliticization of the predicate is disfavored (Díaz 2004: 34):<sup>68</sup>

- (112) a. La reunión es en Roma  
The meeting is in Rome
- b. ?? La reunión lo es  
The meeting CL-ACC is

Interestingly, as also noted by Díaz (2004: 34), the cliticization is possible with these sentences if the whole SC is replaced:

- (113) a. La reunión es en Roma  
The party is in the street  
b. Lo es  
CL-ACC is

As should be obvious by now, this is exactly the pattern that we found in locational *haber*-sentences, as discussed in the previous section. Here I repeat (98) as (114):

- (114) a. Hay una niña en el parque *locational*  
Is a kid-FEM in the park  
There is a kid in the park.  
b. ?? La hay en el parque  
CL-FEM was in the park  
There were some kids in the park.  
c. La hay  
CL-FEM is

Díaz (2004: 36), however, concludes that this comparison is not enough to relate the SCs with these verbs, given that the clitic is invariant with *ser* and *estar*. Given this conclusion, it is difficult for her to give an explanation for the origin of the ACC Case in existential constructions, which she acknowledges (2004: 68–72). I want to propose, following a long tradition, that the relation between *haber* (be-existential), *ser* (be) and *estar* (be-locative) is deeper than just the presence of the small clause.

A relation between verbs that instantiate *have* and *be* has been proposed by Freeze 1992,<sup>69</sup> who shows that these verbs are related, suggesting a unique deep structure for all of them in the relevant respects. Also, Kayne 1993 uses Freeze's account (combined with ideas from Szabolcsi 1983) to explain several properties of the possessive. For similar ideas in the context of Romance languages see also Guéron 1995, Longa, Lorenzo and Rigau 1998, among others.

A comparison between Spanish and English is extremely revealing in this respect. We can trace a very complex scenario here. In table (115) we intend to represent some of the basic properties that relate the verbs in question, without the intention of being exhaustive. As we can see, given the set of properties associated with *be* and *have*, Spanish has a distinction finer-grained than English:<sup>70</sup>



|       |                             |         |         |
|-------|-----------------------------|---------|---------|
| (115) | Properties                  | Spanish | English |
| a.    | Passive                     | Ser     | Be      |
| b.    | Individual-level predicates |         |         |
| c.    | Locative (for events)       |         |         |
| d.    | Progressive                 | Estar   |         |
| e.    | Stage-level predicates      |         |         |
| f.    | Locative (for individuals)  |         |         |
| g.    | Existential                 | Haber   |         |
| h.    | Auxiliary                   |         |         |
| i.    | Possessor                   | Tener   |         |

The following sentences exemplify the cases in table (115):

- (116)

a.

El ratón era perseguido por el gato

PASSIVE

The mouse was chased by the cat.
- b.

El gato era inteligente

INDIVIDUAL-LEVEL

The cat was intelligent.
- c.

La clase es en este edificio

LOCATIVE (EVENTS)

The class is in this building.
- d.

El gato estaba persiguiendo al ratón

PROGRESSIVE

The cat was chasing the mouse.
- e.

El gato estaba cansado

STAGE-LEVEL

The cat was tired.
- f.

El gato estaba en la casa

LOCATIVE (INDIVIDUALS)

The cat was in the house.
- g.

Había un gato en la casa

EXISTENTIAL

was a cat in the house

There was a cat in the house.
- h.

El gato ha muerto

PERFECT

The cat has died.
- i.

El gato tiene un collar

POSSESSOR

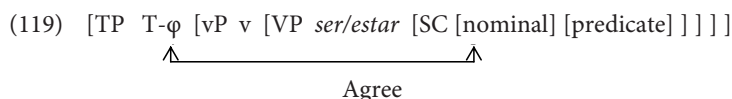
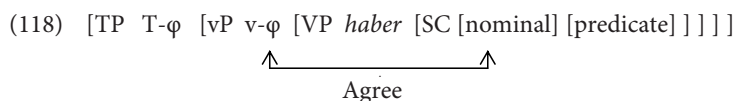
The cat has a collar.

It is quite possible that each one of the “properties” in (115) has a different surface syntactic configuration and that such “properties” can be grouped in a different fashion in different languages. To account for all these properties is beyond the scope of this paper. However, I want to highlight the correlation between Locative and Existential (both expressed by *be* in English):

| (117) Properties   | Spanish | English |
|--------------------|---------|---------|
| Loc-events (116c)  | Ser     | Be      |
| Loc-indiv (116f)   | Estar   |         |
| Existential (116g) | Haber   |         |

If indeed these verbs have an underlying common structure, as the relevant literature seems to suggest, then we may have an explanation for the apparently strange small  $v$  in Spanish existential constructions. It comes from the same small  $v$  that is necessary to license SC with these verbs. The difference between the two small  $v$ s is that with *haber*, the head  $v$  has  $\phi$ -features, whereas with *estar/ser* it doesn't.

This difference has a very important consequence for case-valuation. The  $v$  with *haber* is able to value ACC Case because it is able to establish an Agree relation with the nominal, given that it has  $\phi$ -features. This means that the small  $v$  in *haber*-sentences is licensing both the nominal and the SC.<sup>71</sup> In *ser/estar*, however, the small  $v$  can only license the SC, because it does not have  $\phi$ -features. The [case]-features of the nominal must be valued by T; therefore, with *ser/estar*, the nominal will get NOM, whereas with *haber* it will get ACC. This is illustrated below:



Recall that in (118), T- $\phi$  values its  $\phi$ -features by probing v- $\phi$  (in SII) or by getting a default value (in SI), and that, since  $v$  is  $\phi$ -less in (119), it does not interfere with the relation between the nominal and T- $\phi$ .

If this is correct, the family of verbs *ser*, *estar*, *haber* share something special: they all require a small  $v$  to license its internal SC.<sup>72</sup> In the case of *ser* and *estar*, this small  $v$  is  $\phi$ -less, so the nominal will need to value its Case by undergoing Agree with T, receiving NOM. In the case of *haber*, this small  $v$  has  $\phi$ -features, so the nominal can receive ACC – and T either probes small  $v$  (SII) or receives a default value (SI), as discussed.

In this section, we have shown that the idea of a special small  $v$  (a small  $v$  without external argument) is not an *ad hoc* device for explaining the properties of *haber*-sentences, but that its presence may be motivated by the need to license the internal SC that all verbs of this class have.

It is of course not clear why a SC needs to be licensed in this way. But we could be dealing here with a general property of embedded clauses. Even full embedded clauses can trigger the presence of ACC clitic:

- (120) a. Juan dijo que volverá  
           John said that come-FUT  
           John said he will come
- b. Juan lo           dijo  
           John CL-ACC said

A deeper exploration of these issues is needed, which I will leave for future research.

In the following section, I will present additional facts that may provide further support for another aspect of the system I'm developing here, namely, the idea that small *v* is  $\phi$ -incomplete. They are related to the complex behavior of the Definiteness Effect (DE) in Spanish, and the even more complex syntax and semantics of the Spanish Differential Object Marking (DOM). Given the intricate nature of these facts, and the limited scope of this paper, I confine myself to presenting some preliminary observations and offering some speculative suggestions that may eventually lead to an integrated solution with further research.

## 5. Some speculations: DE and DOM

There are (at least) two Spanish configurations where we can confirm a Definiteness Effect (DE): *haber*-sentences and unmarked direct objects (direct objects without preposition).

Like English *there-be* sentences, Spanish *haber*-sentences display a DE. However, they do not allow nominals specified for [person], as we discussed in Section 3.1:

- (121) a. Había un hombre en la habitación  
           was a man in the room  
           There was a man in the room.
- b. \* Había Juan en la habitación  
           was John in the room  
           \* There was John in the room.
- (122) a. Lo/La           había  
           CL-MAS/CL-FEM was
- b. \*Me/Te/Nos había  
           Me/Te/Us was  
           There was me/you/us

What is particularly interesting – and here we are dealing with a difference between the Spanish DE and the English DE – is that proper nouns and First and Second pronouns are not allowed even under list-readings with *haber*, in contrast to English existential constructions (see section 3.1). To obtain a list-reading with [person] nominals, Spanish must use *estar*:

- (123) a. Está/\*Hay Juan  
Is John  
There is John.
- b. Estás/\*Has tú  
are you  
There is you.

A very similar effect is present with Spanish unmarked objects. In Spanish, animate Direct Objects (DO) normally need to be marked by the preposition *a* “to”, which is the dative preposition (see Demonte 1987, Pensado 1995, Brugé and Brugger 1996, Torrego 1998, 1999, Laca 2001, Aissen 2003, Leonetti 2003, among many others). This preposition, however, is not present if the animate object is non specific:

- (124) a. Mató una mujer UNMARKED ANIMATE OBJECT  
killed a woman (*non specific*)  
He killed a woman.
- b. \* Mató María  
killed Mary  
He killed Mary.
- (125) a. Mató a una mujer MARKED ANIMATE OBJECT  
killed PREP a woman (*specific*)  
He killed a woman.
- b. Mató a Mary  
killed PREP Mary  
He killed Mary.

Allow me to use the features [animate] and [specific] to describe this situation. We have these possibilities:<sup>73</sup>

|                     |                           |
|---------------------|---------------------------|
| (126) MARKED OBJECT | [+animate]<br>[+specific] |
| UNMARKED OBJECT     | [+animate]                |
|                     | [-specific]               |
|                     | [-animate]                |
|                     | [+specific]               |
|                     | [-animate]                |
|                     | [-specific]               |

This means that Spanish presents a case of Differential Object Marking (DOM), a phenomenon that has been observed in a number of languages – see Bossong 1991, Aissen 2003 and references there-in. Among Romance languages, Spanish shares DOM with Rumanian,<sup>74</sup> but we also find DOM in languages as diverse as Hindi and

Turkish. Let me illustrate the phenomenon with respect to Turkish (whose parallelism with Spanish was observed by Brugé & Brugger 1996).

Turkish is not exactly like Spanish in the relevant respect because it does not have the animacy constraint. However, what is important for us is that the accusative suffix *-yı* is dropped if the object is non specific (just like the Spanish preposition *a* is dropped with non specific animate objects):<sup>75</sup>

- (127)

a.

Bir araba

isti-yor-um

UNMARKED OBJECT

a car-UNMARKED ACC want-PRES-1SG

I want a car (*non specific*).
- b.

araba-yı

isti-yor-um

MARKED OBJECT

car-MARKED ACC want-PRES-1SG

I want the car *or*

I want a car (*specific*).

Furthermore, with Turkish existential sentences, the internal DP cannot have the suffix *-yı*. As in English and Spanish, in this case, the internal DP has a non specific reading:

- (128)

a.

Buranda bir araba

var

Here a car-UNMARKED ACC exist

There is a car here.
- b.

\*Buranda araba-yı

var

Here car-MARKED ACC exist

There is the car here.

In other words, it seems that there is a correspondence between being a marked object and some particular interpretation, which I will refer to as INT. In addition, the unmarked object receives the complement of INT (= INT’). For Turkish, INT is [+specific] and therefore INT’ will be [-specific]. For Spanish, the situation is a little more complex:

|       |                 |      |                           |   |
|-------|-----------------|------|---------------------------|---|
| (129) | MARKED OBJECT   | INT  | [+animate]<br>[+specific] | a |
|       |                 |      | [+animate]<br>[-specific] | b |
|       | UNMARKED OBJECT | INT’ | [-animate]<br>[+specific] | c |
|       |                 |      | [-animate]<br>[-specific] | d |

Remember that we observed a symmetrical distinction – see the discussion in section 3.1 – with respect to the restrictions on the internal nominal of *haber* sentences, which I will now express as following:

- (130) The nominal of *haber* always receives INT' and never INT.

This means that its object will always be unmarked (without preposition *a*), which is, of course, true.<sup>76</sup> There is nothing particularly new here. But, by combining (129c) and (130), we can make an additional prediction:

- (131) Objects [-animate] but [+specific] are allowed with *haber*.

This is unexpected, since English *there-be* sentences are not supposed to allow [+specific] nominals. Contrary to this, in Spanish, the prediction in (131) is borne out. Although the facts have been noticed for a long time, the claim in (131) has never been stated in this way (as far I know). In fact, some researchers have used the data in question to argue that there is no Definiteness Effect in Spanish existential constructions. For example, Suñer (1982a:70) denounces what she calls "the myth of Definiteness Restriction in *hay* sentences".<sup>77</sup>

Consider this sentence, where the definite article (*el*=the) is allowed in *haber*-environments:

- (132) ...y allí no hay *el problema* de...  
...and there, there-isn't *the problem* of...  
[Suñer 1982a: 70]

Given usual characterizations of the DE (Milsark 1974, Safir 1985), we expect that the definite article would be banned from *haber*-sentences, or that a list-reading would arise. However, if we use [+animate] and [+specific] objects, the resulting sentence becomes ungrammatical (it cannot even have a list-reading):<sup>78</sup>

- (133) \* ...y allí no hay *el estudiante* de...  
...and there there-isn't *the student* of...

In fact, Suñer (1982a:82) notes that *haber*-sentences are degraded with specific and animate objects, but she doesn't attach any significance to this fact, arguing that this is a side effect from the requirement of preposition with this kind of object in Spanish. I claim that this is not a "side effect", but the main effect we need to explain, given the generalizations in (129) and (130).<sup>79</sup>

Although more discussion is needed, in particular regarding the specificity – see Leonetti 2003 and Heusinger and Kaiser 2003 for an extensive discussion – and the role of list-readings to define the DE, we can postulate the following generalization:

- (134) If a nominal is allowed in *haber*-sentences, then it will be allowed as an unmarked object with any other transitive verb.

Unfortunately, the generalization has at least one strong exception.<sup>80</sup> Some quantifiers are allowed under *haber* but they require the preposition *a*:

- (135) a. No hay nadie en casa  
Not is nobody in house  
There is nobody at home.

- b. No maté\*(a) nadie  
Not killed (to) nobody  
I didn't kill anybody.

Another potential problem is that some [+animate, +specific] objects (which needs the preposition) can be placed in relative clauses with *haber* (but they are not allowed in the non relative structure):

- (136) a \* Hay los ladrones en la esquina  
Be the thieves in the corner  
There are the thieves in the corner.  
b No maté\* (a) los ladrones  
Not killed (to) the thieves  
I didn't kill the thieves.  
c Los ladrones que hay en la esquina  
The thieves that be in the corner  
The thieves that are in the corner.

However, the relativization also eliminates the preposition:

- (137) Los ladrones que mataron  
The thieves that they killed

Before throwing away (134), let me suggest that we may still have a hope of retaining it. First, there may be an independent reason for the presence of the preposition with *nadie* in (135). The phenomenon may be relatable to the raising of Negative Quantifiers in Icelandic (Svenonius 2000). Second, at least some *there-be* sentences cancel the DE under relativization – the so called “amount relatives” (Carlson 1977):

- (138) The papers that there were on the desk

These are, of course, highly speculative suggestions. Acknowledging that, let me put aside these problems, in the hope that a fully worked out analysis of specificity (or the topicality, as suggested by Leonetti 2003) will explain them.

If (134) is correct, the DE in existential sentences and the DE with unmarked animated objects are the same phenomenon, at least for Spanish (and Turkish, *mutatis mutandi*). Then, we may entertain the idea that what unifies both DEs is a grammatical property that is common to both of them, which in turn correlates with (129).

*Haber*-sentences must have a  $\nu$ P, as discussed in the previous sections. But it is not a standard  $\nu$ P (it does not have external argument). This small  $\nu$  is a  $\varphi$ -incomplete small  $\nu$ , in the sense that it has [number]-features, but not [person]-features. This excludes any nominal that is marked with [person] as the internal nominal of *haber*. If the nominal is specified for person, small  $\nu$  will be able to probe it, valuing its own [number] feature, but it will not be able to value the [case] feature of the object, given Chomsky's (2000, 2001a,b) suggestion that incomplete  $\varphi$ -features cannot value [case],

as discussed above.

Recall that [person] nominals, as well as proper nouns are banned from *haber*-sentences even under list-readings:

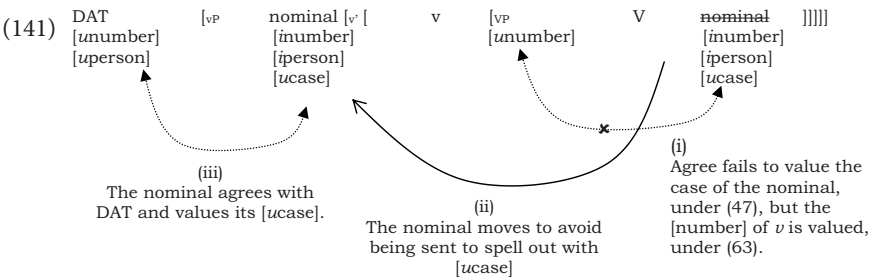
- (139) a. Está/\*Hay Juan  
Is John  
There is John.
- b. Estás/\*Has tú  
are you  
There is you.

Interestingly, this restriction survives in *haber*-relatives, beside the fact that this context deactivates the DE (to form a relative here, we need *estar*):

- (140) a. Juan, quien \*hay/está en la esquina  
John, who is in the corner
- b. Tú, que \*has/estás en la esquina  
You, that are in the corner

Let me further assume the  $\nu$ P that we find with normal transitive constructions, that is, with verbs other than *haber*, also lacks the [person]-feature, just like its *haber*-counterpart, which, in fact, produces the same result, namely, the DE restriction over [person] objects. Only nominals that are not specified for [person] will be able to check Case against this  $\nu$ . If a nominal is specified for [person], the small  $\nu$  will be able to probe it and to value its own [number] feature (so no  $\phi$ -features will remain unvalued); however, it will be incapable of valuing the Case feature of the nominal, given the standard assumption that  $\phi$ -incomplete heads are not capable of valuing Case (Chomsky 2000). Therefore, under Bošković 2005 version of the Phase Impenetrability Condition, if the nominal stays in situ, it won't be able to check Case, because it will be spelled out. Thus, it is forced to move, to avoid being sent to Spell Out without checking Case. Recall that we ruled this movement out for nominals with *haber*-sentences (see the discussion about (69)), under the assumption that their  $\nu$ P does not have a specifier, given that it does not have external argument, i.e. [Spec,  $\nu$ P]. However, normal transitive constructions do have an external argument, i.e. [Spec,  $\nu$ P], thus movement to [Spec,  $\nu$ P] will be possible. If we further assume that there is an additional Dative head that can value the case feature of the shifted-object, we have an explanation regarding why the object carries a DAT marker, namely, the preposition:<sup>81</sup>





This idea is in line with standard explanations of the phenomenon. For instance, according to Torrego 1998, an accusative a-DP (a Direct Object marked with *a*) undergoes overt raising to the Specifier of vP. She assumes that *v* has a D feature that attract the marked DO, and that the dative preposition *a* has also a D feature to check with *v*. Furthermore, she proposes that marked DOs have an inherent Case (on top of the structural one). What I’m adding to the picture is a motivation for the need for the second head (the DAT head) to check case.

If we further assume, as we did for *haber*-sentences, that there is a mapping like (142), we can easily account for the animacy and specificity constraint in both *haber*-sentences and regular accusative verbs:

- (142)

[specified person]

↔

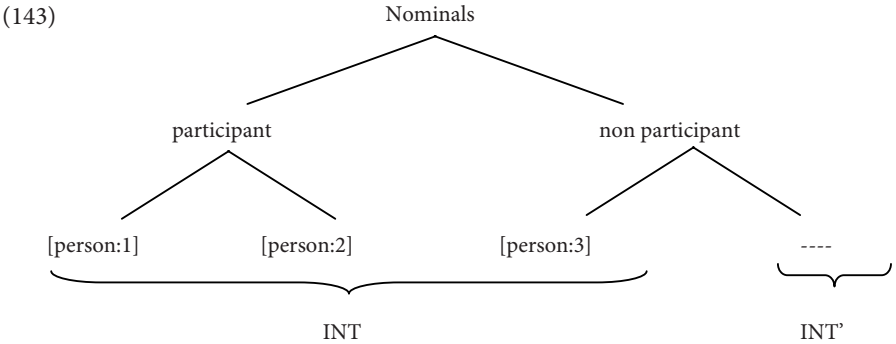
INT

[non specified person]

↔

INT’

Recall that I assume the following classification of nominals with respect to [person] – see the discussion about (41):



Among the many questions that these speculations raise, there is one that I should not avoid here. The small *v* proposed for *haber*-sentences does not have external argument. This is appropriate because *haber* has no subject, as discussed, and no possibility for specifier. What about other transitive verbs? Although it is not impossible to suggest

that this is a different kind of *vP* – and therefore, that in these cases we have full *vPs* with a position for the external argument, but with the same lack of [person],<sup>82</sup> as just discussed – let me push the speculation further.

Suppose that the similarities between *haber*'s small *v* and the small *v* with regular transitive verbs are more than just the lack of [person]-feature, in particular, suppose that for all transitive verbs the small *v* does not have a position for an external argument either. In order to satisfy the  $\theta$ -Criterion, suppose further that there is a subject clitic (SCL) that can satisfy not only the  $\phi$ -features of T, but can also receive the external theta role from the verb; under this view, there cannot be small *pro* (as suggested by Manzini and Savoia 2002), since its role is taken over by the SCL, and then we do not need a position for it. Additionally, to account for the presence of overt preverbal subjects, let's assume that they are based-generated in the left periphery (Contreras 1991, Barbosa 1995, Olarrea 1996, among others), and that they are clitic-doubled by the SCL (sharing the  $\theta$ -role); therefore, we don't need a  $\theta$ -position for them in the *vP* domain. To the extent that these assumptions are theoretically plausible and empirically adequate,<sup>83</sup> we will have no use for a position normally reserved for an external argument. This amounts to saying that *vP* is a non interpretative projection with both *haber* and regular transitive verbs, in the sense that it bears no relation to the external  $\theta$ -role.<sup>84</sup>

To follow all the consequences of this line of reasoning is far beyond the scope of this paper. However, I hope that these speculations regarding the relation between DE and DOM in Spanish have shown that my proposal for a small *v* in *haber*-sentences is not an ad hoc device that only explains the presence of ACC and agreement in *haber*-constructions, but also a plausible way to capture deeper properties of ACC constructions in Spanish.

## 6. Conclusions

I have given an explanation for a dialectal split in Spanish with respect to agreement in Existential Constructions with *haber*. In the SI dialect the verb has default value (3rd person, singular), but in the SII dialect, the verb agrees with the internal nominal, despite the fact that the nominal is accusative, as shown by the cliticization data. This state of affairs seems to be a direct challenge for theories that link Agreement with Case, since, in SII, the nominal seems to be in agreement with T, but T cannot be its Case-licensor because T does not value ACC. However, I have presented an analysis of the phenomenon in question that preserves the relation between Case and Agreement and supports the operation Agree (Chomsky 2000, 2001a,b).

I contend that Spanish existential constructions with *haber* have a small *vP* which accounts for the presence of ACC (in both dialects). Additionally, there is a ban on nominals with [person], the underlying assumption being that only [1p], [2p] and some [3p] nominals are marked for [person]. Spanish Existentials Constructions with

[person] nominals, contrary to their English counterparts, cannot have a presentational (or “list”) reading (they are simply ungrammatical). Interestingly, in SII, *haber* can be inflected for [1p] or [2p] even when the internal nominal is [3p]; furthermore, in these cases, it is not possible to use an explicit subject (that is, these sentences are still existential). If we postulate a *pro* with a [person] value ([1p] or [2p]) as responsible for the valuation of T in SII, we would expect that it could be replaced by a lexical pronoun (as any other instance of *pro* in Spanish), which is contrary to the facts. In addition, *pro* would violate the ban on [person]-marked nominals in Spanish Existential constructions.

I have shown that we can solve all these problems by postulating: (A) a small  $\nu$  with only [number] and no [person], for Existential constructions in both dialects, and (B), for SII, a T with an interpretable [person] feature, in addition to its uninterpretable [number]. According to (A), if small  $\nu$  has only [number], the ban on nominals with [person] is explained, given Chomsky’s suggestion that only complete probes can value the [case] feature of the goal. Nominals with [person] won’t be able to value their [case] feature. If the nominal does not have [person], the probe  $\nu$  will be complete with respect to its goal, then it will be able to value its [case] feature. In SII, given that T has only one uninterpretable feature, namely [number], it can probe  $\nu$ , producing the effect of object-agreement – this is possible because the  $\phi$ -features of  $\nu$  are still present, since the deletion procedure applies only at the point of Spell-Out and this  $\nu$ P is not a phase (since the small  $\nu$  does not have an external argument). (B) correctly predicts that in SII *haber*-sentences, the verb can be inflected in all persons, even if no nominal has the proper value. In addition, in SI, where both  $\phi$ -features ([person] and [number]) in T are uninterpretable, small  $\nu$  is incomplete with respect to T, thus unable to value its features, and then T must use some additional mechanism to obtain a default value – most likely, by using a SCL. Further predictions have been borne out with respect to raising verbs as well as several other differences between SI and SII.

I suggested that the origin for this small  $\nu$  is the need to license Small Clauses in verbs that belong to the family of *haber-ser-estar* (all of them instances of English BE). In addition, I speculated that the same mechanism is behind the phenomenon of Differential Object Marking in Spanish, which can help us to understand the peculiarities of the Definiteness Effect in Spanish.

As mentioned, the analysis supports the relation between Case and Agreement, and the operation Agree (Chomsky 2000). Additionally, given that it shows evidence that the case of the internal nominal in existential constructions is valued in a lower position (not by T), it provides a way of encoding the insight of the Partitive Case Hypothesis (Belletti 1988, Lasnik 1992) in the Agree system (although with different technical details).

## Notes

\* I want to thanks to all the people that contributed to the completion of this paper. Above all, to Željko Bošković for his tireless revisions and questions; without him, this paper would have been just the shadow of what actually is. Many thanks also to Jonathan Bobaljik for his generous suggestions and ideas. Thanks to Yael Sharvit and Susi Wurmbrand for their comments and support in earlier versions of the paper. A special thanks to Howard Lasnik: it was in the middle of a conversation with him that I got the seminal intuition behind this paper. Thanks to the audience in ECO 5 (Harvard, 2005), and to the people that have been willing to hear parts of my story, or share their manuscripts with me, in particular, to Artemis Alexiadou, Ana Bastos, Miriam Díaz, Sarah Felber, Takako Iseda, Bosook Kang, Brenda Laca, Masashi Nomura, Antxon Olarrea, Iván Ortega-Santos, David Pesetsky, Kenneth Safir, and Erik Schoorlemmer. I also thank Serkan Şener and Nilufer Şener for discussion on the Turkish data, and Tito del Piélago for helping me to collect judgments in Lima. None of them should be held responsible for what I have done with their suggestions and ideas.

1. I will use SI for the dialect without agreement, and SII for the one with agreement. When there is no indication, the sentence is good or bad in both dialects.

2. The clitic *lo* in (1b) will be argued not to be specified for [person]. On the other hand, the pronouns in (i), which are unacceptable even in list reading, are specified for [person] (see the discussion in section 3.1):

- (i) \* Me/Te/Nos había  
Me/Te/Us was  
There was me/you/us.

3. See Cuervo 1881, Luque Moreno 1978, García Llebra 1983, Nicita 1997, Treviño 2003. This literature uses three types of argument against the idea that the nominal in question is not a subject. First, they characterize the nominal, which is the only argument in the sentence, as the “psychological subject” (as opposed to “grammatical subject”). Second, they show that the nominal agrees with the verb (in SII), then, they argue, it has become a true “grammatical subject”. Third, they observe the absolute lack of preposition *a*, which usually appears with some direct objects in Spanish. Obviously, the first argument makes use of a different notion of subject, making it a notion independent of structural considerations, a view from which I depart. I will show in the following section that the nominal in SII does not actually enter into an Agree relation with T, eliminating the second argument. In section 5 I will give some reasons why the third argument is not strong enough.

4. Under the Agree model (Chomsky 2000, Chomsky 2001a,b), it is possible to define *subject* as the nominal that enters into an Agree relation with T, without raising to [Spec, T]. As we will see in section 2 and 3, this also rules out the internal nominal in *haber*-sentences as the subject, since the nominal will be in agreement with small *v*, not with T, in both dialects.

5. This is indeed possible in Spanish in some occasions, as we will see in section 1.3, but it cannot be the explanation for the word order in SEC, as will be discussed immediately.

6. See Section 4 for additional discussion about the relation between *haber* and *estar*. See also Suárez (1982a: 324–336).

7. There are some claims in the literature (for instance, Díaz 2004: 38) that sentences like (5b) are unacceptable. Although it is possible that (5b) does not fit easily in certain contexts where

(5a) is preferable to its *estar* counterpart (5b), there are contexts where (5b)-type sentences are not only possible but fully productive in Spanish. For instance, when we want to introduce a hypothetical individual about whom we are going to tell a joke (or a short story):

- (i) Un borracho estaba en la cantina cuando...

A drunk guy was in the bar when...

In addition, the individual does not need to be hypothetical:

- (ii) Fíjate, un ladrón está en tu ventana y se va a meter a tu casa

Look at, a thief is in your window and (he) is going to enter in your house

(i-ii) show that the *estar*-sentences are able to introduce new individuals into the discourse and that they can take an indefinite subject (as any other verb in Spanish). See Barbosa (1995: 35–37) for a discussion of other preverbal indefinite subjects in several Romance languages which need a particular context to be pragmatically acceptable.

8. I am assuming that the original place of the nominal is in the Small Clause inside *haber*'s VP, as proposed by Stowell 1981, 1983, Safir 1985, among others, for English existentials. See also section 4.

9. See the last section for additional discussion of the Spanish DE with *haber*-sentences.

10. I leave aside the issue of what exactly the position of the verb in these constructions is. I will assume, however, that the verb is in the head of some XP above TP – that, of course, could be C<sup>0</sup>, or maybe Top<sup>0</sup> (in the spirit of Bastos 2001). There is, however, some controversy regarding the possibility of T-to-C movement in Spanish (see Goodall 1993, 2002, Suñer 1994, Ordóñez 1997, Barbosa 2001). The alternative is that the subject does not leave its  $\theta$ -position and that the verb raises to T. For an account in favor of T-to-C, see Pesetsky and Torrego 2000. In any case, in (22b), as in (23), the verb is higher than the subject – and the nominal in question is not an object, but a subject in (22b) as well as in (23) (recall also the impossibility of extraction out of the postverbal nominal with *estar* in (7b), which is not in its  $\theta$ -position).

11. We must notice, however, that fronting of the nominal with *haber* is fully acceptable if it is a bare plural noun (a plural noun without a determiner):

- (i) a. Libros hay en el escritorio

Books be in the desk

There are books in the desk.

- b. Hormigas había en el jardín

ants was in the garden

There were ants in the garden.

In addition, we should take into consideration that bare nouns cannot be preverbal subjects in Spanish, regardless of the verb – Suñer (1982a: 209–217) calls this “the naked noun constraint”, see also Pérez Silva 1990, Bosque 1996, among others:

- (ii) a. \* Hormigas están en el jardín

ants are in the garden

Ants are in the garden.

- b. \* Hormigas murieron en el jardín

ants died in the garden

Ants died in the garden.

Given (ii), I conclude that *Hormigas* and *Libros* are not subjects in (i).

12. Notice that if we assume that a null expletive takes care of the  $\phi$ -features of T, we still need

a probe to value the case of the nominal. We will discuss this in the next section.

13. I am abstracting away from [gender] in this paper.

14. Under Hale and Keyser's 1993 framework, a transformation from a combination like [V [N walk]] into [V walk] would take place in the pre-syntactic component (a sort of lexical syntax). In this scenario, an incorporation N-to-V could render the Case feature inactive. Given that, in narrow syntax, we may not have an object position, then we would need something like (33b). However, it could be argued that the process described above happens in syntax, and then unergative constructions are simply transitive constructions. I left this issue open.

15. This implies that we are not considering the possibility of a full expletive (like *it*). I will return to it in the next section.

16. And even if *v* were to head a strong phase, nothing would change. According to Chomsky 2000, only the tail of a phase is spelled out, not the specifier or the head. Therefore, there is no reason to assume that Spell Out would delete the  $\varphi$ -features of small *v* before it enters into an Agree-relation with the higher T.

17. I put aside, for the moment, the possibility of a quasi-argument. I will come back to this in the next section.

18. Notice that (35) is not a mechanism of default agreement, but a normal mechanism of agreement (in SII, the verb agreement is ultimately controlled by the nominal).

19. It is necessary to keep this in mind. That a given speaker can accept both versions of existentials constructions does not mean that the agreement is optional – against some suggestions to the contrary: Contreras (1976: 142), Westphal (1980: 61), Treviño (2003: 179). At best, speakers who accept both are bi-dialectal. Being a native speaker of SII myself, I remember my surprise when I was first introduced to SI as the “correct” dialect. Now, however, I can accept SI *haber*-sentences.

20. This has received considerable attention in the sociolinguistic literature, where the phenomenon is usually called “the personalization of *haber*” (Silva-Corvalán 2001: 30) – see Montes 1982, Obediente 1984, Bentivoglio 1989, Navarro Correa 1991, De Mello 1991, 1994, Domínguez et al. 1998, Díaz-Campos 1999–2000, among others. Notice, however, that this literature generally considers the agreement in SII as evidence that the nominal is a subject and no longer an object, but without discussion of the lack of other subject properties, and no explanation is provided for the presence of the ACC clitic. Some authors explicitly belittle this fact: “La posible realización de este SN como un pronombre coreferencial no parece ser un argumento que interese a los hablantes” [The possible realization of this NP as a coreferential pronoun does not seem to be an argument that calls the attention of the speaker] (Domínguez et al. 1998: 33). These opinions, however, must be considered in its real dimension, since they show something very important. The presence of agreement in the data is so pervasive that the researchers are willing to consider the nominal as a subject, putting aside other properties. Then, we can consider that the sociolinguistic explorations confirm that the agreement between the nominal and *haber* is widely spread, despite of the fact that the nominal is an object or even an ACC clitic. This shouldn't be so strange, since agreement with the verb does not need to be a property of subjects, as a minimal cross-linguistic examination immediately shows.

21. It is not clear, however, how far we are from a Benvenistean position. If we take the idea of “non person” to be related with the value of [person], and not with the category itself, we could reconcile the two positions. If First Person is [person: +1–2] and Second Person is [person: –1+2], Third Person could be [person: –1–2], which leaves room for the called “First person inclusive”

[person:+1+2], a pronoun that refers to both participants, a possibility very well attested among languages. I have no space here to explore all the consequences of this move. For expository reasons, I will continue to use [3p] to refer to non-participants nominals that carry [person].

22. See also note 21. The dialectal differences with respect to these clitics are more complex. For instance, there are dialects where *le* substitutes *lo* completely. See Fernández-Ordoñez 1999 for a description.

23. In section 5, I will provide a more detailed explanation for this interpretative difference with respect to the Definiteness Effect (DE) and the Differential Object Marking (DOM).

24. Notice that this implies that some specific nominals are allowed under *haber*, if they are inanimate, a claim that can be traced back to Suñer (1982a), although she presents it in a different way, as we will see in section 5. It is also worth noting that in dialects that distinguish between *lo* and *le* (as ACC clitic), *le* is banned from *haber*-sentences, as predicted.

25. As mentioned, I'm abstracting away from other features, like [gender], since these don't play any role in the system I'm developing here. For other analysis where syntactic heads can be underspecified, see Béjar (2003:37) and the references there in.

26. Notice that I am assuming that T will not be able to value the [case] feature of the nominal. The reason for that is that T needs to probe *v* and cannot escape its interference, failing to probe across *v*. In other words, we are dealing here with a minimality effect, since small *v* is the closest goal to T.

27. This will be particularly important when we discuss default agreement in the next subsection.

28. In fact, Spanish has also these possibilities, using the verb *tener* ("to have") or *ser* ("to be") – notice that here we have an overt subject:

- (i) Nosotros tenemos dos estudiantes en la clase  
We have two students in the class
- (ii) Nosotros somos dos estudiantes en la clase  
We are two students in the class

29. Notice that the internal nominal in SI *haber*-sentences cannot value the features of T, because it has already checked its [case] feature, hence it is no longer active for Agree; furthermore, it is also incomplete, as discussed.

30. This is not a problem in SII, where T has only one uninterpretable [number], which can be valued by the interpretable [number] of these nominals, under (48).

31. Notice that this situation suggests that case-valuation happens under Match, although it produces  $\phi$ -valuation.

32. In fact, as Rezac (2003: fn 14) notes, Chomsky (2001b: fn 19) also seems to suggest a default agreement mechanism for unvalued features.

33. The discussion below is somewhat tentative. If the subject clitic analysis to be developed is not adopted, we can still fall back to the more traditional default agreement mechanism without affecting the rest of the analysis developed in this paper.

34. This conclusion is reinforced by the diachronic fact that these dialects seem to be parallel developments in Spanish, that is, it is not the case that SII comes from SI or vice versa.

35. Notice that the invariable SCL for SI SEC will be the only one (with [3p, SING]), but for non existential sentences we need a whole set of SCLs. This is not a disadvantage with respect to the

*pro* analysis, since, if we use *pro* to value the  $\phi$ -features of T, we will also need a whole set of different *pros*.

36. As pointed out by Jonathan Bobaljik (p.c.), (67b) will mean “We sometimes light a bonfire after *we* raining”, otherwise.

37. Some questions arise, of course, regarding the nature of this mandatory control. I won’t address this issue here.

38. There is an additional possibility that we need to consider. Suppose that the pleonasm is  $\phi$ -incomplete, that is, it has only [person] and no [number]; suppose further that it has a [case] feature to check, and that it is generated in [Spec,  $\nu$ P] – all of them, very plausible assumptions. From there, it can value the [person] feature of T (in SI), according to Condition (62), but the [number] feature will have a default value, as discussed in the previous subsection. This mechanism is indistinguishable from the situation where the pleonasm is  $\phi$ -complete, however; in addition, this means that we need both a pleonasm and default agreement. Since we are trying to use the pleonasm to replace the mechanism of default agreement, we don’t gain anything from this incomplete pleonasm. To the extent that an interpretable [person] in SI and a SCL in SI can do the job of a pleonasm (that is, controlling a pleonastic PRO), there is no evidence in favor of the pleonastic form. Furthermore, it is not clear if SECs have quasi-arguments, as we will discuss immediately.

39. For instance, *haber*-sentences cannot be passivized. This fact could be explained by different conditions (Torrego 1984 suggests that passives require a completely specified agent). In fact, as it is very well known, some verbs that do have two full arguments cannot be passivized either:

- (i) a. Juan tiene un auto blanco  
John has a white car
- b. \* Un auto blanco es tenido por Juan  
A white car is had by John

Whichever is the explanation for this fact, it cannot be used against the idea that there is a full  $\nu$ P – interesting *tener* (to have) is closely related with *haber*, as we will see in section 4.

40. Of course we could stipulate that it is not, but this stipulation is by itself a disadvantage.

41. See the last section for the suggestion that in normal transitive construction small  $\nu$  is also  $\phi$ -incomplete, which triggers Object-Shift of the  $\phi$ -complete nominal to check case with another head, presumably, a Dative head. This could explain why Spanish is a Differential Object Marking language.

42. We are disregarding the possibility of checking EPP, in line with Epstein and Seely 1999, Boeckx 2000, Grohmann et al. 2000, Bošković 2002, Wurmbrand 2004, among others.

43. Of course, we could use Pesetsky and Torrego’s 2004 suggestion that interpretable features are not always valued features. Under this view, the expletive could have an uninterpretable but valued [person].

44. Or, alternatively, that the expletive is adjoined to T, as Chomsky 2001b suggests for French. It is not easy to say how this is different from a SCL (even in French).

45. It is worth noticing that, if the agreement proves to be actually optional, the idea of two Ts, one with interpretable [person] and the other without it, will be a viable solution. If the agreement is optional in SII, but ungrammatical in SI, this will mean that the only difference between SI and SII is that, in addition to the normal T with full uninterpretable  $\phi$ -features, SII has a T with an interpretable [person] feature.



46. This means that Match is an operation that involves the category as a whole, not feature by feature – but the  $\phi$ -valuation itself can be feature by feature. Here it is worth mentioning that there are proposals that the so called EPP property can be satisfied only under Match, without valuation (Boeckx 2003). Given that under the Inverse Case Filter Hypothesis (Bošković 1997, 2002) the EPP property and the necessity of checking Nominative are the same (to be more precise, the EPP in T is deduced from the latter requirement), we can extend Boeckx's idea by saying that Match is enough to value Nominative. This is not the place to explore all the consequences of this suggestion.

47. This is just a way to simplify an analysis that is more or less standard in the literature, according to which these sentences are Clitic Left-Dislocated structures (CLD) – see Olarrea 1996, Ordoñez and Treviño 1999, Ticio 2004. In fact, following Contreras 1991 and others, Olarrea 1996 claims that that all instances of Spanish overt preverbal subjects are CLD structures. Similar claims have been made for other null subject languages – see Belletti 1990, Barbosa 1995, Alexiadou and Anagnostopoulou 1998.

48. I must say that I don't claim that all regular/irregular differences among verbs should be analyzed like this. SCLs are perfectly compatible with regular verbs (in fact, in (72) the second person is regular). I suggest that what causes the regularization is that this is a sort of “new process” (the probing of  $v$  by T), that forces the morphological component to reanalyze the inflection.

49. In order to be regular, the verbal forms of *haber* should be *habimos* (1p-PLU) and *habieron* (3p-PLU), that is, using the unmodified root *hab-*.

50. I'm going to call *hay* an *exceptional* form, as oppose to *normal*. The familiar regular/irregular distinction does not fit so well here, since some normal forms of *haber* are also irregular. The form *hay* can only appear in the [3p] present tense (singular or plural) of existential constructions; it's an *exceptional* form of *haber*. The *normal* form in third person singular present should be *ha* (as it appears in the auxiliary position of all verbs):

- (i) Normal form (auxiliary in personal constructions, both dialects)  
Juan *ha* caminado  
John has walked.
- (ii) Exceptional form (impersonal constructions, present tense, both dialects)  
*Hay* un hombre en el jardín  
Be-PRES-3p-SIN a man in the garden  
There is a man in the garden.

If *haber* were *normal* in impersonal constructions (present tense), (ii) would be:

- (iii) \* *Ha* un hombre en el jardín  
Be PRES-3p-SIN a man in the garden  
There is a man in the garden.

As auxiliary or in the imperfect tense in SEC, however, HABER is *regular* (and not just *normal*) in both dialects:

- (iv) Personal constructions (regular, as auxiliar)  
Juan *había* muerto  
John had died
- (v) Impersonal constructions (also regular)  
*Había* un hombre en el jardín  
Be-3p-SING a man in the garden  
There is a man in the garden

51. Interestingly, *haber* had this usage in Old Spanish, and in fact this usage survives in some fixed forms in Modern Spanish (Rigau 2001: 308–309):

- (i) Tiempo ha.  
Time have-3p-sing  
Long ago

52. At least in Peruvian Spanish, (79) is substandard (it is a stigmatized form), whereas (80) is standard. We will come back to this point.

53. It could also be a deverbial nominal (Fernández-Soriano and Táboas-Baylin (1999: 1749):

- (i) Hace veinte años de tu venida  
Makes twenty years of your arrival  
You came twenty years ago.

54. It is true that this is the so called “future” verbal suffix. This seems to be in contradiction with the fact that the matrix verb is in the past. However, it is a very well known fact about the Spanish “future” verbal suffix that it is very often only a marker of modality (as the translation shows). The real future in Spanish is usually formed with the periphrasis *ir a* (“go to”):

- (i) Voy a ir al cine mañana  
I-go to go to the movies tomorrow  
I’m going to go to the movies tomorrow.

55. In fact, it has been proposed (see, for example, Franco 1993) that ACC and DAT clitics are the  $\phi$ -features in the head responsible for case-valuation (small *v*, in our case). However, I would like to remain agnostic between the idea that clitics are agreement features on *v* or that they undergo movement from the based-generated position. See Zagana (2002: 184–194) and the references there in for discussion on this topic with respect to Spanish clitics.

56. Unfortunately, the author does not provide any external characterization of this dialect. Actually, she seems to imply that this behavior is common of all Spanish, or at least all SII. This is, however, not true, as the discussion until now has shown.

57. For comparable distinctions in English, see Hornstein, Rosen, and Uriagereka 2000, and Felber 2002.

58. Interestingly, this is similar to the situation with *hace*-sentences in the previous subsection.

59. Notice that this is a case of “contingent” *haber*, so the effects of SII-T do not apply here. Besides, the variability in the judgments seems to be cross-dialectal.

60. Many researches presents cases where the clitic is licensed in some questions with a locative phrase; for instance:

- (i) – ¿Hay estaciones de metro en esta zona de la ciudad?  
Be there subway stations in this area of the city  
Are there subway stations in this area of the city  
– No las hay en esta zona pero las hay muy cerca  
No CL be in this area but CL be very close  
Not in this area, but close  
[Torrego 1984: 333]

However, in such cases, the *haber*-sentence is not locational. In (i), for instance, we cannot paraphrase the verb with *estar* but we must use *existir* (to exist):

- (ii) – ¿Existen/\*Están estaciones de metro en esta zona de la ciudad?  
 Exist / Be-LOCAT subway stations in this area of the city  
 Lit: Do subway stations exist in this area of the city?

This means that the presence of a locative phrase does not mean that the *haber* sentences is truly locational.

61. Some issues arise with respect to symmetry with other inherent case configurations. Here the assigner does not c-command the assignee. If we accept that c-command by the assigner is necessary for inherent case assignment, we could still implement the idea just described by incorporating X into the verb *haber*. This will create a c-command relation. In fact, this gives us another possibility to implement the assignment of inherent case. If X incorporates into *haber*, it could give the ability to assign inherent case to the resulting element *haber+X*; in this case, *haber+X* will be the inherent case assigner, under standard c-command. I will leave this issue open. It is worth noting, however, that Lasnik (1999:86–87), following Saito and Hoshi's 1994 analysis of Japanese light verb constructions, makes a similar suggestion. According to Lasnik, in English, the predicate of the small clause in existential constructions raises to V<sup>0</sup> (and then to AgrO<sup>0</sup>) to assign inherent case (partitive case) to the internal nominal.

62. Notice that I'm abstracting away from the role of T-def (defective T) here. There are two alternatives. On one hand, it could be that T-def is defective because it has no  $\phi$ -features (at least in Spanish); in this case, it is completely outside of the Agree system. On the other hand, it could be that it is defective in the sense that its  $\phi$ -features are not able to value Case (after all, the  $\phi$ -features do surface in some languages, like Brazilian Portuguese), but still are able to participate in Agree; if the latter is true, in (103), T-def could probe v- $\phi$  and then serve as a goal for the higher T- $\phi$ . I will leave this issue open, however.

63. Suñer only suggests that this could happen because the nominal in SII is a sort of "hybrid" construction with some subject characteristics, but she does not elaborate on this idea.

64. Notice that here there is no source for ACC other than the small *v* of *haber*. *Parecer* (to seem) does not license ACC.

65. See also Bošković 1997, 2002, 2005, Epstein and Seely 1999, Martin 1992, among others, for arguments in favor of the Partitive Case Hypothesis. For discussion of its limitations, see Chomsky (1995:288), Vikner (1995:171–176), Vainikka and Maling 1996, Hornstein 2000, among others.

66. In Chomsky's 2000 system, this happens to satisfy the EPP. However, it has been argued that there is no EPP. There are alternative explanations for raising of subjects. See Epstein and Seely 1999, Boeckx 2000, Grohmann et. al. 2000, Bošković 2002, 2005, Wurmbrand 2004, among others. Note also that if we assume that overt preverbal subjects are Left-Dislocated structures (Contreras 1991, Barbosa 1995, Olarrea 1996, among others), there is no need to resort to the EPP (the  $\phi$ -features of T will be canceled by personal SCLs).

67. Interestingly, copular verbs *ser* and *estar* (both "be") are not the only Spanish verbs that license this invariant clitic *lo*. The clitic also appears with *parecer* ("seem") and sometimes with *semejear* ("be similar to") – see Fernández-Leborans (1999:2361).

68. See also Fernández-Lebans 1999 for a description of other patterns of cliticization with these sentences.

69. This follows an idea that can be traced back to Benveniste 1966b.

70. The actual state of affairs is even more complex than what can be inferred from the Spanish data (see Freeze 1992 for extensive discussion and a cross-linguistic survey). For instance, in

addition to the copula *sein* (equivalent to Spanish *estar*), some German dialects have two other existential verbs: *hot* (similar to existential English *be*) and *gibt* (roughly, *give*) – see Czinglar 2001, Haeberli 2002, among others, for discussion. Czinglar 2001 proposes that these German verbs are also related; to put it in very simple terms (risking to oversimplify her explanation), she suggests that the “existential” meaning derives from the “possessive” one. On independent grounds, Harley 1996 has suggested that *give* has an internal *have* as part of its structure (which, in turn, will have a *be*, according to Freeze 1992’s account). Boeckx 1998 has suggested that Harley’s account could help explain German existentials. Of course, these issues need to be considered more carefully if I were to extend the current proposal beyond Spanish.

71. It is not clear what the exact mechanism for this SC-licensing is. It seems plausible to assume that small *v* has an additional set of features (let’s call them Predicate-features) that can establish an Agree relation with the head of the SC – a PredP category, as it is sometimes proposed (Bowers 1993). I will put the details of this proposal aside, merely assuming that small *v* is needed to license a SC. The reader should bear this assumption in mind.

72. Of course other verbs can license SCs too; for instance *considerar* (“to consider”). But these are regular transitive verbs (they have external arguments), with a full small *v* (which can also license the SC). As expected, the clitics agree with the corresponding nominal with these verbs.

73. This generalization is very similar to the one presented by Heusinger and Kaiser (2003: 53), and it also shares its limitations, as we will see below.

74. In Spanish and Rumanian, DOM seems to be very robust. But DOM can also be found in non-standard varieties of Italian (Southern Dialects in particular), Gallego, Portuguese and French (see Pensado 1995: 14–16).

75. I thank Serkan Şener and Nilufer Şener for the Turkish data.

76. In principle, this removes the possibility of using the lack of preposition to suggest that we are not dealing here with an ACC object, which has been proposed occasionally (see, for instance García Llebra 1983, Groat 1999). See however the discussion below.

77. Remember that *hay* is the Present form of existential *haber*, which Suñer takes as the representative of the verb.

78. I’m assuming that the DE produces the list-readings that we find with specific nominals inside existential constructions (see McNally 1997 for a uniform way to explain them): *There is John*. However, there is a restriction on [person] in Spanish existentials, so, *\*Hay Juan* (“There is John”) does not have a list reading, it is just ungrammatical. An additional prediction arises at this point: with [+specific, -animate] nominals under *haber*, we have list readings. This is correct:

- (i) Sí hay algo que hacer aquí: hay la piscina y también hay el cine.  
Yes is something to do here: is the pool and also is the theater

For sure, there is something to do here: there is the pool and there is also the theater.

79. Given that Suñer (1982) does not relate existential constructions to DOM, she must stipulate that the preposition is banned from *haber*-sentences.

80. See Nicita 1997 to some discussion of other potential problems for this generalization.

81. One possibility is that the DAT head has both structural Case and inherent Case. This will imply that the marked object is a sort of “quirky object”, which has been already suggested by Torrego 1998, in analogy with the Icelandic quirky case – see Nomura 2005 for a recent

characterization of “quirky” as an element receiving both structural and inherent case, in the context of the Agree system; see also Chomsky (2001b: fn 19). The structural Case is checked under Agree, and the preposition will be the morphological manifestation of the inherent Case.

82. In fact, we need to allow for the *vP* to have a specifier, otherwise the nominal could not escape the *vP*. On the other hand, if the *haber-vP* does not have specifier, then this also accounts for the fact that the nominal cannot escape the *vP* and enter in an Agree relation with *T*, as discussed in the last part of section 3.2.3.

83. I leave open what happens with postverbal subjects.

84. Recall, however, that we still need to allow for the small *v* in regular transitive constructions to have a derived specifier as the position for object-shift, given our previous analysis in (141). Under this view, even if small *v* with transitive verbs does not have a base-generated specifier, it can allow the creation of a specifier as a position available for object-shift.

## References

- Adger, D., and Harbour, D. 2003. The syntax and syncretisms of the person case constraint. Ms., *Queen Mary, University of London and MIT*.
- Aissen, J. 2003. Differential object marking: Iconicity vs. economy. *Natural Language & Linguistic Theory*, 21(3):435–483.
- Alexiadou, A., and E. Anagnostopoulou. 1995. SVO and EPP in Null Subject Languages and Germanic. *FAS Papers in Linguistics*.
- Alexiadou, A. and E. Anagnostopoulou. 1998. Parametrizing AGR: Word order, V-movement and EPP checking. *Natural Language & Linguistic Theory* 16: 491–539.
- Alexiadou, A., and E. Anagnostopoulou. 2004. From hierarchies to features: Person splits and direct-inverse alternations. Ms., *University of Stuttgart and University of Crete*.
- Barbosa, P. 1995. Null Subjects. PhD dissertation, MIT.
- Barbosa, P. 2001. On Inversion in Wh-questions in Romance. In *Subject Inversion in Romance and the Theory of Universal Grammar*, A. Hulk and J.-Y. Pollock, 20–59. Oxford: OUP.
- Bastos, A. 2001. ‘Fazer, eu faço! Topicalização de constituintes verbais em português brasileiro’. MA thesis, Universidade Estadual de Campinas.
- Béjar, S. 2003. Phi-Syntax: A theory of Agreement. PhD dissertation, University of Toronto.
- Béjar, S. and M. Rezac. 2003. Person licensing and the derivation of PCC effects. In *Romance Linguistics. Theory and Acquisition. Selected papers from the 32nd Linguistic Symposium on Romance Languages (LSRL), Toronto, April 2002.*, T. Pérez-Leroux and J.-Y. Roberge, 49–62. Amsterdam: John Benjamins.
- Belletti, A. 1988. The case of unaccusatives. *Linguistic Inquiry* 19: 1–34.
- Belletti, A. 1990. *Generalized Verb Movement*. Turin: Rosenberg and Telier.
- Bello, A. 1847. *Gramática de la lengua castellana destinada al uso de los americanos*, anotada por R.J. Cuervo, ed. crítica R. Trujillo, Madrid, ArcoLibros, 1988.
- Benveniste, É. 1966a. *Problèmes de linguistique générale*. Paris: Gallimard.
- Benveniste, É. 1966b. *Être et avoir dans leurs fonctions linguistiques*. In *Problèmes de linguistique générale*, 187–207. Paris: Gallimard.

- Bentivoglio, P. 1989. Haber. ¿Un verbo impersonal? Paper presented at *45 Congreso Internacional de Hispanistas. Estudios sobre el español de América y lingüística afroamericana*, Bogotá: Instituto Caro y Cuervo.
- Boeckx, C. 1998. Expletive split: Existentials and presentationals. Paper presented at *NELS 29*.
- Boeckx, C. 2000. EPP eliminated. Ms., *University of Connecticut*.
- Boeckx, C. 2003. Intricacies of Icelandic agreement. Ms. *University of Harvard*
- Bošković, Ž. 1997. *The Syntax of Nonfinite Complementation: An economy approach* [Linguistic Inquiry Monographs 32]. Cambridge MA: The MIT Press.
- Bošković, Ž. 2002. A-Movement and the EPP. *Syntax* 5(3): 167–218.
- Bošković, Ž. 2005. On the locality of move and sgree: Eliminating the activation condition, generalized EPP (strength), and the phase-impenetrability condition. In *University of Connecticut Occasional Papers in Linguistics*. Vol 3., S. Herdan and M. Rodríguez-Mondoñedo (eds). University of Connecticut, Storrs.
- Bossong, G. 1991. Differential object marking in romance and beyond. Paper presented at *XVII Linguistic Symposium on Romance Languages. New analysis in Romance linguistics*, Urbana Champaign.
- Bosque, I. (ed). 1996. *El sustantivo sin determinación*. Madrid: Visor
- Bowers, J. 1993. The syntax of predication. *Linguistic Inquiry* 24: 591–656.
- Brugé, L. and G. Brugger. 1996. On the accusative a in Spanish. *Probus* 8: 1–51.
- Burzio, L. 2000. Anatomy of a generalization. In *Arguments and Case. Explaining Burzio's generalization*, Eric Reuland (ed.), 195–241. Amsterdam: John Benjamins.
- Bull, W. 1943. Related functions of *Haber* and *Estar*. *Modern Language Journal* 27: 119–123.
- Cardinaletti, A. and T. Guasti. 1995. *Small Clauses* [Syntax and Semantics 28]. New York NY: Academic Press.
- Carlson, G. 1977. Amount relatives. *Language* 58: 520–542.
- Chomsky, N. 1965. *Aspects of the Theory of Syntax* [Special Technical Report Massachusetts Institute of Technology. Research Laboratory of Electronics 11]. Cambridge MA: The MIT Press.
- Chomsky, N. 1981. *Lectures on Government and Binding* [Studies in Generative Grammar 9]. Dordrecht, the Netherlands: Foris Publications.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge MA: The MIT Press.
- Chomsky, N. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, R. Martin, D. Michaels and J. Uriagereka, 89–155. Cambridge MA: The MIT Press.
- Chomsky, N. 2001a. Derivation by phase. In *Ken Hale: A life in language*, M. Kenstowicz (ed.), 1–52. Cambridge MA: The MIT Press.
- Chomsky, N. 2001b. Beyond explanatory adequacy. *MIT Occasional Papers in Linguistics* 20.
- Contreras, H. 1976. *A Theory of Word Order with Special Reference to Spanish*. Amsterdam: North-Holland.
- Contreras, H. 1991. On the position of subjects. *Syntax and Semantics* 25: 63–79.
- Contreras, H. 1996. Economy and Projection. In *Aspects of Romance Linguistics: Selected papers from the Linguistic Symposium on Romance Languages XXIV March 10–13, 1994*, C. Parodi, C. Quicoli, M. Saltarelli and M.L. Zubizarreta, 149–160. Washington DC: Georgetown University Press.
- Cuervo, R. [1881] 1921. *Notas a la Gramática Castellana de Andrés Bello*. Paris: Roger y Chernoviz.
- Czinglar, C. 2001. Decomposing existence. In *Issues in Formal German(ic) Typology*, W.

- Abraham and C. J.-W. Zwart, 85–126. Amsterdam: John Benjamins.
- De Mello, G. 1991. Pluralización del verbo haber impersonal en el español hablado culto de once ciudades. *Thesaurus. Boletín del Instituto Caro y Cuervo* XLVI: 445–471.
- De Mello, G. 1994. Pluralización del verbo haber impersonal en el español hablado culto. *Studia Neophilologica* 66: 77–91.
- Demonte, V. 1987. C-command, prepositions, and predications. *Linguistic Inquiry* 18: 147–157.
- Demonte, V. 1990. *Teoría sintáctica*. Madrid: Síntesis.
- Díaz, M. 2004. Las oraciones existenciales con *haber* en español en el marco minimalista, MA thesis, University of Arizona.
- Díaz-Campos, M. 1999–2000. La Pluralización del verbo haber en dos áreas dialectales de Hispanoamérica. *Anuario de Lingüística Hispánica* 15–16: 235–245.
- Domínguez, C. L., B. Guzmán, L. Moros, M. Pabón and R. Vilaín. 1998. Personalización de HABER en el español de Mérida. *Lengua y Habla* 3: 23–36.
- Epstein, S., and D. Seely. 1999. SPEC-ifying the GF “subject”; eliminating A-chains and the EPP within a derivational model. Paper presented at *LSA summer institute workshop on grammatical relations*.
- Fernández-Leborans, M. J. 1999. La predicación: las oraciones copulativas. In *Gramática Descriptiva de la Lengua Española*, I. Bosque and V. Demonte (eds), 2357–2460. Madrid: Espasa-Calpe.
- Fernández-Ordoñez, I. 1999. Leísmo, láismo y loísmo. In *Gramática Descriptiva de la Lengua Española*, I. Bosque and V. Demonte (eds), 1317–1398. Madrid: Espasa Calpe.
- Fernández-Soriano, O. 1989. Rección y ligamiento en Español: Aspectos del parámetro del sujeto nulo. PhD dissertation, Universidad Autónoma de Madrid.
- Fernández-Soriano, O. 1999. Two types of impersonal sentences in Spanish: Locative and dative subjects. *Syntax* 2: 101–140.
- Fernández-Soriano, O. and S. Táboas-Baylin. 1999. Construcciones impersonales no reflejas. In *Gramática descriptiva de la lengua española*, I. Bosque and V. Demonte (eds), 1721–1778. Madrid: Espasa-Calpe.
- Felber, S. 2002. Two types of expletive constructions. Ms., University of Connecticut.
- Franco, J. 1993. On Object Agreement in Spanish. PhD dissertation, University of Southern California.
- Freeze, R. 1992. Existentials and other locatives. *Language* 68: 553–595.
- García Llebra, V. 1983. ¿Complemento Directo o sujeto con las formas unipersonales de *haber*? *Revista de Filología Española* LXIII: 33–71.
- Goodall, G. 1993. SPEC of IP and SPEC of CP in Spanish wh-questions. In *Linguistic Perspectives on the Romance Languages*, W. Ashby et al. (eds), 199–209. Amsterdam: John Benjamins.
- Goodall, G. 2002. The EPP in Spanish. In *Objects and Other Subjects*, W. Davies and S. Dubinsky (eds), 193–223. Amsterdam: Kluwer.
- Groat, E. M. 1999. Raising the case of expletives. In *Working Minimalism*, S.D. Epstein and N. Hornstein (eds), 27–44. Cambridge MA: The MIT Press.
- Grohmann, K., J. Drury and J.C. Castillo. 2000. No more EPP. Paper presented at *WCCFL 19*.
- Guéron, J. 1995. On HAVE and BE. In *Proceedings of NELS 26*: 1, J. N. Beckman (ed.), 191–206. Amherst MA: GLSA.
- Haerberli, E. 2002. *Features, Categories and the Syntax of A-Positions Cross-Linguistic Variation in the Germanic Languages*. Dordrecht: Kluwer.



- Haider, H. 1985. The case of German. In *Studies in German Grammar*, J. Toman (ed.), 65–101. Dordrecht: Foris.
- Hale, K., and S.J. Keyser. 1993. On argument structure and the lexical expressions of syntactic relations. In *The View from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, K. Hale and S. J. Keyser (eds), 53–109. Cambridge MA: The MIT Press.
- Harley, H. 1996. If you have, you can give. Paper presented at WCCFL XV.
- Harley, H. and E. Ritter. 2002. Person and number in pronouns. *Language* 78:482–526.
- Heusinger, K. von and G. A. Kaiser. 2003. Animacy, specificity, and definiteness in Spanish. In *Proceedings of the Workshop Semantic and Syntactic Aspects of Specificity in Romance Languages*, K. von Heusinger and G. A. Kaiser, 41–65. Konstanz: Universität Konstanz.
- Hernanz, M.L. and J.M. Brucart. 1987. *La Sintaxis*. Barcelona: Crítica.
- Hiraiwa, K. 2005 Dimensions of Symmetry in Syntax: Agreement and clausal architecture. PhD dissertation, MIT.
- Holmberg, A. and C. Platzack. 1995. *The Role of Inflection in Scandinavian Syntax*. Oxford: OUP.
- Hornstein, N. 2000. Existentials, A-chains and reconstruction. *DELTA* 16:45–79.
- Hornstein, N., S. Rosen and J. Uriagereka. 2000. Integrals. Ms., University of Maryland, University of Kansas.
- Hurtado, A. 1984. La hipótesis de la discordancia. *Los clíticos del español y la gramática universal. Supplement of the Revista Argentina de Lingüística*: 56–77.
- Kany, C. 1951. *American-Spanish Syntax*. Chicago IL: University of Chicago Press.
- Kato, M. A. 1999. Strong and weak pronominals in the null subject parameter. *Probus* 11:1–37.
- Kato, M. A. 2000. The partial prodrop nature and the restricted VS order in Brazilian Portuguese. Ms., UNICAMP.
- Kayne, R. 1993. Toward a modular theory of auxiliary selection. In *Parameters and Universals*, R. Kayne (ed.) (2000), 107–130. New York: OUP.
- Koopman, H. and D. Sportiche. 1988. Subjects. Ms., UCLA, Los Angeles, California.
- Laca, B. 2001. El Objecto Directo. Ms. To appear in *Sintaxis histórica del español. Tomo I: La frase verbal*, C. Company. México: Fondo de Cultura Económica y UNAM.
- Lapesa, R. 1980. *Historia de la lengua española*. Madrid: Gredos.
- Lasnik, H. 1992. Case and expletives: Notes toward a parametric account. *Linguistic Inquiry* 23:381–405.
- Lasnik, H. 1995. Case and expletives revisited. On greed and other human failings. *Linguistic Inquiry* 26:615–633.
- Lasnik, H. 1999. *Minimalist Analysis* [Generative Syntax 3]. Malden MA: Blackwell.
- Legate, J. A. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34:506–516.
- Leonetti, M. 2003. Specificity and object marking: The case of Spanish a. In *Proceedings of the Workshop Semantic and Syntactic Aspects of Specificity in Romance Languages*, K. von Heusinger and G. A. Kaiser, 67–101. Konstanz: Universität Konstanz.
- Longa, V., G. Lorenzo and G. Rigau. 1998. Subject clitics and clitic recycling: Locative sentences in some Iberian Romance languages. *Journal of Linguistics* 34: 125–164.
- Luque Moreno, J. 1978. En torno al sintagma “haber impersonal + sustantivo” y sus orígenes latinos. *Revista Española de Lingüística* 8: 125–147.
- Manzini, R. and L. Savoia. 2002. Parameters of subject inflection in Italian dialects. In *Subjects, Expletives and the EPP*, Peter Svenonius (ed.), 157–199. Oxford: OUP.
- Marantz, A. 1991. Case and licensing. Paper presented at ESCOL.



- Martin, R. 1992. Case theory, A-chains, and expletive replacement. Ms., University of Connecticut.
- McNally, L. 1997. *A Semantics for the English Existential Construction*. New York NY: Garland Press.
- Milsark, G. 1974. Existentials Sentences in English. PhD dissertation, MIT.
- Montes, J.J. 1982. Sobre el sintagma “haber + sustantivo”. *Thesaurus. Boletín del Instituto Caro y Cuervo* XXXVII: 383–385.
- Navarro Correa, M. 1991. Valoración social de algunas formas verbales en el habla de Valencia (Venezuela). *Thesaurus. Boletín del Instituto Caro y Cuervo* XLVI: 304–315.
- Nicita, L. M. 1997. Impersonal haber and the road to copula function. *Colorado Research in Linguistics* 15: 32–46.
- Nomura, M. 2003. Expletives Move! In *Proceedings of the thirty-second Western Conference on Linguistics (WECOL 2003)*, Vol. 15, B. Agbayani, V. Samiian and B.V. Tucker, 207–220. Fresno CA: California State University, Fresno, Department of Linguistics.
- Nomura, M. 2005. Nominative Case and AGREE(ment). PhD dissertation, University of Connecticut.
- Obediente, E. 1984. La personalización de haber en el habla culta de Caracas. *Actas del VII Congreso de la ALFAL. Santo Domingo, RD*. 51–61.
- Olarrea, A. 1996. Pre- and Postverbal Subject Position in Spanish: A minimalist account. PhD dissertation, University of Washington.
- Ordóñez, F. 1997. Word Order and Clause Structure in Spanish and Other Romance Languages. PhD dissertation, City University of New York.
- Ordóñez, F. and E. Treviño. 1999. Left dislocated subjects and the pro-drop parameter: A case of study of Spanish. *Lingua* 107: 39–68.
- Ortega-Santos, I. 2004. Impersonal constructions, unaccusatives and the EPP in Spanish. Ms., Paper presented to WCCFL 2004.
- Pensado, C. 1995. El complemento directo preposicional: estado de la cuestión y bibliografía comentada. In *El complemento directo preposicional*, Carmen Pensado (ed.), 11–59. Madrid: Visor.
- Pensado, C (ed.). 1995. *El complemento directo preposicional*. Madrid: Visor.
- Pérez Silva, J. 1990. Sobre la frase nominal castellana. BA Thesis. Lima: PUCP.
- Pesetsky, D. and E. Torrego. 2000. T-to-C movement: Causes and consequences. In *Ken Hale: A life in language*, M. Kenstowicz, 355–426. Cambridge MA: The MIT Press.
- Pesetsky, D. and E. Torrego. 2004. The syntax of valuation and the interpretability of features. Ms., MIT/UMass Boston.
- Picallo, M. C. 1998. On the extended projection principle and null expletive subjects. *Probus* 10: 219–241.
- Radford, A. 1997. *Syntactic Theory and the Structure of English*. Cambridge: CUP.
- Rezac, M. 2003. The fine structure of cyclic Agree. *Syntax* 6: 156–182.
- Reuland, E. (ed.). 2000. *Arguments and Case. Explaining Burzio’s generalization*. Amsterdam: John Benjamins.
- Rigau, G. 1994. Catalan presentational sentences and the properties of AGR. In *Paths Towards Universal Grammar. Studies in honor of Richard S. Kayne*, G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi and R. Zanuttini, 343–360. Washington DC: Georgetown University Press.
- Rigau, G. 2001. Temporal existential constructions in Romance. In *Romance Languages and*

- Linguistic Theory* 1999, Y. D'hulst, J. Rooryck and J. Schroten, 307–334. Amsterdam: John Benjamins.
- Rivero, M. L. 1980. On left-dislocation and topicalization in Spanish. *Linguistics Inquiry* 11: 363–393.
- Runner, J. 1992. Expletives, 'replacement', and economy. *Catalan Working Papers in Linguistics*, A. Branchadell et al. (eds), 281–317. Barcelona: Universitat Autònoma de Barcelona.
- Szabolcsi, A. 1983. The possessor that ran away from home. *The Linguistic Review* 3: 89–102.
- Safir, K. 1985. *Syntactic Chains*. Cambridge: CUP.
- Saito, M., and H. Hoshi. 1994. Japanese light verb construction and the Minimalist Program. Ms., *University of Connecticut*.
- Siewierska, A. 2004. *Person*. Cambridge: CUP.
- Silva-Corvalán, C. 2001. *Sociolingüística y pragmática del español*. Washington: Georgetown University Press.
- Stepanov, A. 2002. Derivational properties of inherent case. Ms., Universität Potsdam, Potsdam.
- Stowell, T. 1981. Origins of phrase structure, MIT: Doctoral dissertation.
- Stowell, T. 1983. Subjects across categories. *The Linguistic Review* 2: 258–312.
- Suñer, M. 1982a. *Syntax and Semantics of Presentational Sentence-Types*. Washington DC: Georgetown University Press.
- Suñer, M. 1982b. Impersonal *haber* in Non Standard Spanish. *Cornell Working Papers in Linguistics*: 94–107.
- Suñer, M. 1988. The role of agreement in clitic-doubled constructions. *Natural Language & Linguistic Theory* 6: 391–434.
- Suñer, M. 1994. Verb movement and the licensing of argumental wh-phrases in Spanish. *Natural Language & Linguistic Theory* 12: 335–372.
- Svenonius, P. 2000. Quantifier movement in Icelandic. In *The Derivation of VO and OV*, P. Svenonius (ed.), 255–292. Amsterdam: John Benjamins.
- Svenonius, P. 2002. *Subjects, expletives, and the EPP*: Oxford studies in comparative syntax. Oxford: OUP.
- Ticio, E. 2004. On the position of subjects in Puerto Rican Spanish. *University of Connecticut Working Papers in Linguistics* 12: 78–92.
- Torrego, E. 1984. Algunas observaciones sobre las oraciones existenciales con *haber* en español. *Estudios gramaticales* 1: 329–339.
- Torrego, E. 1998. *The Dependencies of Objects* [Linguistic Inquiry Monographs 34]. Cambridge MA: The MIT Press.
- Torrego, E. 1999. El complemento directo preposicional. In *Gramática descriptiva de la lengua Española*, I. Bosque and V. Demonte, 1779–1806. Madrid: Espasa.
- Travis, L. 1984. Parameters and Effects of Word Order Variation. PhD dissertation, MIT.
- Treviño, E. 2003. On the subjecthood issue of existential *haber*. In *Linguistic Theory and Language Development in Hispanic Language*, S. Montrul and F. Ordóñez, 178–192. Somerville MA: Cascadilla.
- Utley, J. 1954. *Haber* and *estar*. *Hispania* 37: 225.
- Vainikka, A. and J. Maling. 1996. Is partitive case inherent or structural? In *Partitives. Studies on the distribution and meaning of partitive expressions*, J. Hoeksema (ed.), 179–208. Berlin: Mouton de Gruyter.

- Vikner, S. 1995. *Verb Movement and Expletive Subjects in the Germanic Languages* [Oxford Studies in Comparative Syntax]. New York: OUP.
- Westphal, G F. 1980. *Subjects and Pseudo-Subjects in Spanish: The verb agreement question in the impersonal se construction* [Current Inquiry into Language and Linguistics Monograph 31]. Edmonton-Carbondale: Linguistic Research, Inc.
- Woolford, E. 2003. Burzio's generalization, markedness, and locality constraints on nominative objects. In *New Perspectives on Case Theory*, E. Brandner and H. Zinsmeister (eds), 299–327. Stanford CA: CSLI.
- Wurmbrand, S. 2004. License case. Ms., University of Connecticut.
- Yip, M., J. Maling and R. Jackendoff. 1987. Case in tiers. *Language* 63:217–250.
- Zagona, K. T. 2002. *The Syntax of Spanish*. Cambridge: CUP.
- Zubizarreta, M. L. 1998. *Prosody, Focus, and Word Order* [Linguistics Inquiry Monograph]. Cambridge MA: The MIT Press.

# Name index

- Agbayani, B.: 22, 31-33  
 Alexiadou, A.: 42f., 279, 337, 340, 347-349, 379, 384, 388  
 Anagnostopoulou, E.: 42f., 279  
 Arregi, K.: 69f., 77-81, 92  
 An, D.: 23f., 32
- Baker, C.: 229  
 Barbosa, P.: 377, 380, 384, 386, 388  
 Béjar, S.: 342-347, 382, 388  
 Benmamoun, E.: 59f.  
 Berwick, R.: 216  
 Bickerton, D.: 221-223, 225f., 229f.  
 Bobaljik, J.: 38, 176  
 Boeckx, C.: 216, 249, 262-264, 285 n.3, 327, 337, 383-384, 386-389  
 Bošković, Ž.: 327f., 334-338, 342f., 345, 349-351, 360, 364f., 374-375, 379, 383f., 386, 389
- Carlson, G.: 116-118, 120, 125, 150-152  
 Chametzky, R.: 216  
 Cheng, L.: 24  
 Chomsky, N.: 3-8, 10-12, 36, 68, 73f., 89, 115f., 123, 130, 132, 138, 143-145, 154, 156, 160, 163f., 175, 182, 185-187, 194, 198f., 203, 206, 208, 213, 215f., 233f., 246, 375-379, 381-383, 386, 388f.  
 Cinque, G.: 70, 91  
 Collins, C.: 182, 192, 200, 202, 216
- Díaz, M.: 328f., 337, 347f., 363, 366f., 379, 381, 390  
 Diesing, M.: 118, 120-121, 126, 153
- Elordieta, A.: 77f., 81  
 Epstein, S.: 10-12, 182-186, 192, 196-198, 200f., 208f.
- Fernández-Soriano, O.: 328, 339, 344, 355-358, 385, 390
- George, L.: 21  
 Groat, E.: 217  
 Grohmann, K.: 164
- Harley, H.: 340, 387, 391  
 Herburger, E.: 68, 72, 75f., 85, 90  
 Heusinger, K.: 373, 387, 391  
 Hoji, H.: 273-275  
 Holmberg, A.: 163  
 Hornstein, N.: 68f., 77, 83-85, 88-90, 93, 217  
 Hoshi, 233  
 Huang, J.: 268f., 271  
 Hudson, R.: 216
- Jaeggli, O.: 233
- Kageyama, T.: 259-261, 264  
 Kawashima, R.: 12, 217  
 Kayne, R.: 168, 178  
 Kitahara, H.: 12, 217  
 Koizumi, M.: 19, 27f.  
 Kuno, M.: 243
- Laka, I.: 80f., 90, 92  
 Larson, R.: 69, 83, 88  
 Lasnik, H.: 365, 378f., 386, 389, 391  
 Lebeaux, D.: 231  
 Leonetti, M.: 362, 371, 373f., 391  
 Levin, N.: 33  
 Lobeck, A.: 22
- Marantz, A.: 249f., 253f., 263f., 336, 338, 391  
 Mathieu, E.: 58  
 McGinnis, M.: 249-253, 255, 257, 262f.  
 McKay T.: 221-223, 225, 230  
 McNally, L.: 342, 387, 392
- Niinuma, F.: 249, 262f.  
 Nissenbaum, J.: 26
- Ochi, M.: 20, 31f.  
 Olarrea, A.: 333, 344, 377, 379, 384, 386, 392  
 Ortiz de Urbina, J.: 69, 77, 79-81, 87, 90, 92f.  
 Öztürk, B.: 282, 285 n.6, n.8, n.10
- Pesetsky, D.: 379f., 383, 392  
 Picallo, C.: 337, 349, 353, 392  
 Postal, P.: 27
- Radford, A.: 25  
 Rezac, M.: 347, 382, 388, 392

Rigau, G.: 357f., 365, 367, 385, 391, 392  
Rizzi, L.: 115, 120, 122f., 129, 276f.

Saito, M.: 386, 393

Seely, T.: 11f., 216

Sitaridou, I.: 58

Stepanov, A.: 360, 393

Stowell, T.: 363, 380, 393

Suñer, M.: 328, 330f., 339, 341, 362, 365, 373,  
379f., 382, 386f., 393

Torrego, E.: 328, 331, 349-351, 371, 376, 380,  
383, 385, 387, 392f.

Treviño, E.: 333, 344, 361, 363, 365, 379, 381,  
384, 392f.

Uriagereka, J.: 10, 26, 68f., 77, 80, 83-85, 88-  
90, 92f., 115f., 123, 129-132, 137f., 140f.,  
145, 149, 153-156, 231

Webelhuth, G.: 224

Williams, E.: 226

Zagona, C.: 333, 385, 394

# Subject Index

- Adjacency, 23-28, 30
- Adjunction, 221, 226-228, 230f.
- Affectee role, 232, 235f.
- Afrikaans (MSA), 37, 42f., 45f., 48-50, 53f.
- Agree, 41f., 54, 234-235, 277, 281, 283, 285 n.3, 327, 335-338, 342-349, 351, 353f., 364f., 375-378
  - Agree-condition on case valuation, 342f., 346f., 351, 376
  - Agree-condition on  $\phi$ -valuation, 342f., 345-348, 351, 353, 376, 382
- Agreement
  - Default agreement, 326f., 337f., 345-349, 353-355, 357, 359f., 381-383
- A-movement, 249, 255f., 259f., 262f.
- Applicative, 249-255, 257, 259, 262, 263
- Arabic, 59
  
- Bare Phrase Structure, 68, 73, 84, 90, 182-185, 187-192, 194f., 197-199, 203
- Binding Theory, 222, 226-230
- Binding Principles
  - Principle A, 223, 229
  - Principle B, 227, 230
  - Principle C, 293
- Burzio's Generalization, 335-337
  
- Case, 222f., 226f., 229, 231
  - Accusative, 326, 336, 345, 348, 352, 372, 376f., 389
  - Case-absorption, 234f.
- Causative, 249, 251, 253-259, 262-264
- C-command, 182-197, 199-201, 221-228, 230
  - Derivational c-command, 182-197, 199-202
  - Representational c-command, 183f., 190-194, 200
- Chain uniformity, 50, 56-58, 60
- Clitics, 327f., 334f., 348, 356, 358-367
  - lo* cliticization, 370, 379, 381f., 385, *see also* *haber*
  - Predicate clitic, 366f.
  - Subject clitic, 347-349, 382
- Conceptual system, 148-150
- Control, 257-261, 264f.
- Copy-deletion, 300
- Cyclic transfer, 11
  
- Danish, 162, 170
- Definiteness Effect, 328, 332, 342f., 370-377, 382
- Differential object marking, 354, 370-377, 382, 383
- Direct object
  - Spanish with preposition, 354, 370-377, 382f.
- Dutch, 43, 46
  
- ECM, 168
- Economy, 35f., 39f., 46, 62
- Ellipsis, 19f., 22f., 25f., 32
- Expletive, 38f., 44-47, 49, 63
  - Null expletive, 349-353
- Extended Projection Principle (EPP), 36f., 39-44, 46f., 49, 51f., 54, 57f., 60f., 63f.
- Event, 75f., 82, 86, 90
  
- Faroese, 42f., 45f.
- Feature dissociation, 12f.
- Feature movement, 19-26, 28-33
- French, 168
- Full Interpretation (FI), 35f., 39f., 52, 60f., 170, 176
  
- Galilean, 3, 5f.
- German, 36, 42f., 45, 49, 54f., 64, 162, 172, 178
- Germanic, 41f., 45f. 54, 161, 172, 173, 177
- Greek, 57, 58
  
- haber*
  - dialectal agreement differences, 326f., 339, 345, 353f., 361-365
  - haber-lo* cliticization, 327f., 334f., 348, 356, 361-365, 379, 381f., 385
  - haber-ser-estar*, 365-370
  - list-readings, 327, 341f., 370, 373, 375, 378f., 387
  - raising verbs, 364f.
  - restrictions on internal nominal, 339-344, 370f.
  - small *v*, 335-338, 365-370
  - tendency to regularize, 354-357
  - types of sentences, 361-364
  - verb without subject, 328-334

- Head movement 19, 21, 31f.  
Holmberg's Generalization (HM), 162f., 172f., 177  
Icelandic, 42f., 45, 64, 162, 172, 249, 252f., 255f., 262-264  
Idiom chunk, 291  
Intentional system, 148-150, 157  
Interface conditions, 115, 123, 129, 136, 141, 143f., 148-150  
Intervention effect, 255, 262, 263  
Japanese, 249, 255-263  
Labels, 182f., 185-195, 197-203, 206  
    Determination of, 235f.  
    Elimination of, 182-184, 188-191, 193-206  
Lambda-abstraction, 294  
Last Resort (LR), 35, 36, 39f., 52, 60f.  
Left Branch Condition (LBC), 56-58  
Locality, 249, 255f., 259, 262f.  
Locus Principle, 200-205  
Logical Form (LF), 37-39, 53, 68, 72, 75-77, 82f., 85, 90, 164, 174, 176  
LF defectiveness, 21, 26, 30  
Long distance movement, 70, 79, 82, 93  
Mapping Condition, 120-129, 132f., 136-142, 147f., 150, 152f.  
Match, 297  
Merge, 182-187, 189-206  
    External Merge, 61-63  
    Internal Merge, 35, 39, 41, 61, 63  
Minimalist Program, 233f., 246  
Minimal Link Condition, 182-184  
Nuclear stress, 69-72, 78, 80f., 91  
Null expletive, *see expletive*  
Null objects, 271  
Null operator, 289  
    Movement of, 243-246  
Null subjects, 270  
Numeration, 143, 145-149, 156  
Object Shift (OS), 161-163, 169, 172-177  
Ontological minimalism, 115f., 138, 141, 150  
Optionality, 36-40, 45-50, 52-55, 57, 60-63  
*parecer*, 364f., 370  
Passive, 249, 251f., 255-262, 264  
    Impersonal, 45-47  
    Indirect, 233, 240-246  
    Morpheme, 233, 238  
PF defectiveness, 21, 23f., 30f.  
Phase, 26f. 30f., 33, 160f., 165, 167-169, 171-176, 178, 249, 251-253, 257, 259  
    Phase Impenetrability Condition (PIC), 160, 161, 165f., 168-174, 177f., 239  
Person, 339-342, 370f.  
Phonological Form (PF), 37-39, 53, 161, 165-168, 170, 173, 175-178  
Phonological Phrase, 161, 166-169, 171f., 175, 177  
Phonological word, 166f., 169f., 176f.  
Pied-piping, 19-21, 23, 25-33, 40-47, 49-52, 54-58, 64, 70, 79-82, 92  
Pleonasm, 349-353  
Predication, 289  
Principle C, *see Binding Principles*  
*Pro*, 290  
    *Pro-drop*, 268f.  
    *Pro-licensing*, 276f.  
Probe-Goal, 194, 206  
Projection, 182-184, 189-192, 194f., 197-202, 204  
Prosodic hierarchy, 165, 177  
Quantifier, 68, 74, 76, 83, 85f., 88-93  
Quasi-argument, 349-353  
Reconstruction, 301  
Reference set, 62  
Reprojection, 69, 77, 83-85, 88-93  
Russian, 56f., 65  
Scope, 75-77, 82-85, 88-90, 93  
Scrambling, 36, 173  
Selection, 182f., 191, 194, 196  
Semantic component, 115, 123, 129-133, 136-141, 144f., 148-150  
Semantic interpretive mechanism, 115f., 129-131, 133, 138, 141, 150  
Spell-Out (S-O), 161, 165f., 178  
Split CP, 115f., 120, 122f., 129, 139, 141, 150  
Strong Minimalist Thesis, 115, 129, 136, 138f., 141, 149f.  
Subcategorization, 182-184, 190f., 193-206  
Subject  
    Major, 243-246

- Temporal existential construction, 357-361
- Term, 183-191, 193, 195-201, 206
- $\theta$ -role suppression, 235
- Throwing in, 140f., 143-150, 156f.
- Topic, 68, 70, 86, 88, 92
- Tough*-Movement, 288
- Trace conversion, 295
- Unaccusative
  - Full unaccusatives, 245f.
- Vacuous Movement Hypothesis, 21, 31
- $v$ P fronting, 280
- Weak pronouns, 164, 170-174, 176



In the series *Linguistik Aktuell/Linguistics Today* the following titles have been published thus far or are scheduled for publication:

- 92 **BOECKX, Cedric (ed.):** Agreement Systems. viii, 339 pp. + index. *Expected August 2006*
- 91 **BOECKX, Cedric (ed.):** Minimalist Essays. 2006. xv, 399 pp.
- 90 **DALMI, Gréte:** The Role of Agreement in Non-Finite Predication. 2005. xvi, 222 pp.
- 89 **VELDE, John R. te:** Deriving Coordinate Symmetries. A phase-based approach integrating Select, Merge, Copy and Match. 2006. x, 385 pp.
- 88 **MOHR, Sabine:** Clausal Architecture and Subject Positions. Impersonal constructions in the Germanic languages. 2005. viii, 207 pp.
- 87 **JULIEN, Marit:** Nominal Phrases from a Scandinavian Perspective. 2005. xvi, 348 pp.
- 86 **COSTA, João and Maria Cristina FIGUEIREDO SILVA (eds.):** Studies on Agreement. 2006. vi, 285 pp.
- 85 **MIKKELSEN, Line:** Copular Clauses. Specification, predication and equation. 2005. viii, 210 pp.
- 84 **PAFEL, Jürgen:** Quantifier Scopepe in German. 2006. xvi, 312 pp.
- 83 **SCHWEIKERT, Walter:** The Order of Prepositional Phrases in the Structure of the Clause. 2005. xii, 338 pp.
- 82 **QUINN, Heidi:** The Distribution of Pronoun Case Forms in English. 2005. xii, 409 pp.
- 81 **FUSS, Eric:** The Rise of Agreement. A formal approach to the syntax and grammaticalization of verbal inflection. 2005. xii, 336 pp.
- 80 **BURKHARDT, Petra:** The Syntax–Discourse Interface. Representing and interpreting dependency. 2005. xii, 259 pp.
- 79 **SCHMID, Tanja:** Infinitival Syntax. Infinitivus Pro Participio as a repair strategy. 2005. xiv, 251 pp.
- 78 **DIKKEN, Marcel den and Christina M. TORTORA (eds.):** The Function of Function Words and Functional Categories. 2005. vii, 292 pp.
- 77 **ÖZTÜRK, Balkız:** Case, Referentiality and Phrase Structure. 2005. x, 268 pp.
- 76 **STAVROU, Melita and Arhonto TERZI (eds.):** Advances in Greek Generative Syntax. In honor of Dimitra Theophanopoulou-Kontou. 2005. viii, 366 pp.
- 75 **DI SCIULLO, Anna Maria (ed.):** UG and External Systems. Language, brain and computation. 2005. xviii, 398 pp.
- 74 **HEGGIE, Lorie and Francisco ORDÓÑEZ (eds.):** Clitic and Affix Combinations. Theoretical perspectives. 2005. viii, 390 pp.
- 73 **CARNIE, Andrew, Heidi HARLEY and Sheila Ann DOOLEY (eds.):** Verb First. On the syntax of verb-initial languages. 2005. xiv, 434 pp.
- 72 **FUSS, Eric and Carola TRIPS (eds.):** Diachronic Clues to Synchronic Grammar. 2004. viii, 228 pp.
- 71 **GELDEREN, Elly van:** Grammaticalization as Economy. 2004. xvi, 320 pp.
- 70 **AUSTIN, Jennifer R., Stefan ENGELBERG and Gisa RAUH (eds.):** Adverbials. The interplay between meaning, context, and syntactic structure. 2004. x, 346 pp.
- 69 **KISS, Katalin É. and Henk van RIEMSDIJK (eds.):** Verb Clusters. A study of Hungarian, German and Dutch. 2004. vi, 514 pp.
- 68 **BREUL, Carsten:** Focus Structure in Generative Grammar. An integrated syntactic, semantic and intonational approach. 2004. x, 432 pp.
- 67 **MIŠESKA TOMIĆ, Olga (ed.):** Balkan Syntax and Semantics. 2004. xvi, 499 pp.
- 66 **GROHMANN, Kleanthes K.:** Prolific Domains. On the Anti-Locality of movement dependencies. 2003. xvi, 372 pp.
- 65 **MANNINEN, Satu Helena:** Small Phrase Layers. A study of Finnish Manner Adverbials. 2003. xii, 275 pp.
- 64 **BOECKX, Cedric and Kleanthes K. GROHMANN (eds.):** Multiple *Wh*-Fronting. 2003. x, 292 pp.
- 63 **BOECKX, Cedric:** Islands and Chains. Resumption as stranding. 2003. xii, 224 pp.
- 62 **CARNIE, Andrew, Heidi HARLEY and MaryAnn WILLIE (eds.):** Formal Approaches to Function in Grammar. In honor of Eloise Jelinek. 2003. xii, 378 pp.
- 61 **SCHWABE, Kerstin and Susanne WINKLER (eds.):** The Interfaces. Deriving and interpreting omitted structures. 2003. vi, 403 pp.
- 60 **TRIPS, Carola:** From OV to VO in Early Middle English. 2002. xiv, 359 pp.
- 59 **DEHÉ, Nicole:** Particle Verbs in English. Syntax, information structure and intonation. 2002. xii, 305 pp.
- 58 **DI SCIULLO, Anna Maria (ed.):** Asymmetry in Grammar. Volume 2: Morphology, phonology, acquisition. 2003. vi, 309 pp.
- 57 **DI SCIULLO, Anna Maria (ed.):** Asymmetry in Grammar. Volume 1: Syntax and semantics. 2003. vi, 405 pp.

A complete list of titles in this series can be found on the publishers' website, [www.benjamins.com](http://www.benjamins.com)